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INFANT MORTALITY IN THE FIRST FOUR WEEKS OF LIFE

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Infant mortality in the first four weeks of life is so intimately connected with prenatal influences that we may consider this period of extra-uterine existence as closely allied in many of its aspects to the history of the fetus *in utero*. There are many conditions of the father and the mother which produce an infant unfitted to resist the physical influences of postnatal existence. A large number of infants live but a few hours or days no matter how we strive to maintain life in them. In other words, our present methods of preserving the life of the new-born do not reach such infants. Perhaps it is fortunate that this is so. The children of parents who suffer from organic diseases, such as syphilis, tuberculosis, heart disease, diabetes or nutritional disorders, may be either premature or unfitted to live. Thus we have an immense number of still-births, in some of which the infants succumb to influences not yet fully understood. Parental influence on postnatal life may not yet be an open book to us. We can understand some weaknesses of the father, such as syphilis, pulmonary diseases, general nutritional disorders, etc., but the influence on the part of the father which causes the weakness of the new-born is, in many phases, not as yet clear. Among the working classes and the absolutely poor, lack of proper food, rest and habits react against the fetus and produce a congenitally weak infant.

It will thus be seen, as I understand it, that the subject of infant mortality in the first few weeks of life must deal with certain definite considerations:

1. Infants born prematurely and congenitally weak though free from constitutional disease such as syphilis.

2. Infants apparently free from disease but too weak to live—those which fall below a definite standard of living-weight, including all still-births occurring without accidental birth complications.

3. Still-births which result from accidents in delivery or from instrumental interference.

4. Infants who are born of good weight, viable and free from constitutional disease, who die of some acquired infection or condition or of inanition. It may be further shown that the condition of life into which this class of infants is born, that is, whether they are legitimate or illegitimate, is a great factor in the continuance of life, and also, whether they are born in poverty or are surrounded by all the necessities for life is another influence to be fully considered.

5. Infants who are born prematurely, of good weight and viable, but are the subjects of constitutional disease.

We must consider in the first class the infants born prematurely and congenitally weak, those weighing less than 1,000 gm. (2 pounds), as unfitted to live.

In European hospitals premature births constitute from 16 to 20 per cent. of the total number. This depends much on what is considered premature, and those are so regarded which are born weighing less than 2,500 gm. (5 pounds). Deaths among the prematurely born in this country and among those so born in European institutions reach a very high figure. The mortality depends largely on the weight, the mode of management after birth, and whether the new-born has come under immediate treatment or has been subjected to exposure. Budin, who made a life-study of this phase of the question, disregards the infant born weighing less than 1,000 gm., for it is rarely reared.

Of infants weighing less than 1,500 gm. (3 pounds), only 1.9 per cent. survive; from 1,500 to 2,000 gm., 2 per cent. survive, giving a gross mortality of 98 per cent. for all prematures born weighing from 1,000 to 2,000 gm. The duration of life of premature infants in institutions conducted as Budin did his, is certainly discouraging, and much more hopeless is the problem outside among the poor, where the infant is not taken to an institution. On the other hand, fully 77 per cent. of the infants born in Budin's institution whose temperature and strength were conserved and who weighed 2,000 gm. (4 pounds) or less, survived. This illustrates the potent influence of exposure on the premature.

As to the further life of the prematurely born infant much depends on the mode of feeding and whether it has escaped extraneous infections. Of those premature infants weighing from 2,000 to 2,500 gm., and born in the institution, 98 per cent. survived. As illustrating the influence of feeding Budin cites fifty-four infants discharged from his institution weighing 2,800 to 3,000 gm. Forty-one per cent. of the artificially fed died, as against 15 per cent. of the breast-fed. We can thus appreciate that aside from the influence of syphilis and constitutional disease the premature infant will survive or succumb according to whether the body temperature is conserved, whether it escapes infection, and last, and as important as any, whether it is placed in a position to have artificial or breast-feeding.

In the breast-fed of this class, as in other classes of infants, the mortality is low as compared to the infant artificially fed. Whereas the mortality among prematurely born breast-fed infants is about 15 per cent., that of the premature infants on bottle-feeding is 41 per cent. In the classification of infants born at full term, the fact that the breast-fed baby is more resistant to the inroads of disease than the bottle-fed infant will be further demonstrated. This does not underestimate the rôle played in the first month of life of the other causes of death which are to be considered.

STILL-BIRTHS

Still-born infants are all infants born dead or who have lived only a few hours after birth. These form an immense quota of infants either premature or congenitally weak, with or without constitutional taint, who are either born alive and live a few minutes or hours or are born dead at full term or are living at birth and die shortly afterward from injuries due to accident, as in instrumental or manual interference. The following table taken from Tugendreich, who quotes Prünzing, is interesting as showing clearly the percentage of still-births which have been caused by faulty labor:

Head presentation	1.8
Face presentation	11.4
Breech presentation	20.7
Transverse presentation	31.0
Prolapsed cord	56.3
Placenta praevia	38.3
Induced labor	19.3
Version foot	30.0
Version head	20.0
Breech extraction	18.8
Cesarean section	25.0

Still-births in Germany in 1906 numbered 62,261 of 2,084,738 births and the number has not materially diminished in recent years. This covers, in round numbers, 3 per cent. of all births and 6 per cent. of all deaths.

The statistics obtained by me in New York for the years 1911 and 1912 present a similar condition. In 132,776 births there were 6,749 still-births, or 5 per cent.

The number of deaths from those causes which produce still-births is considerable. On the other hand, the infant born at full term is subject to the dangers of various infections, though of late years these sources of infection have been reduced. Advances in the methods of governing the conditions which surround the parturient woman have considerably reduced the danger of infecting the new-born. Some diseases of the new-born which were formerly prevalent are now uncommon. Malformation and constitutional disease will remain as prevalent in the future as they have been for decades past.

Morbidity among the new-born is of great interest. First and foremost it is noticeable that among breast-fed infants the mortality is not so high as among the bottle-fed; hence, it is seen that though morbidity may be as frequent, resistance to the inroads of disease is much more successful among breast-fed than among bottle-fed infants. Thus of 2,923 infants dying in Berlin of various causes, 373 were breast-fed, the remainder either were bottle-fed, or the method of feeding was not mentioned in the death certificates. Another matter of interest is that of 10,170 deaths in the first year of life, 2,923 occurred in the first month, that is, 28 per cent., and only 7 per cent. occurred in breast-fed infants. (Howarth, Boeckle, Groth, Finkelstein, Dietrich, Tugendreich. Moreover, we find that in the heated term, from July to September, deaths among bottle-fed infants outnumber those among the breast-fed as 1 to 4 (Tugendreich). This applies more to infants in the first month of life than to those below one year of age, and proves distinctly that the dangers which threaten the artificially fed infant, such as poverty, heat, ignorance, crowding, unskilful feeding and decomposed food, do not apply in the same degree to the breast-fed infant.

A much-discussed influence on the morbidity of new-born infants or of those below the age of one year, is the social position of the parents. It has been shown time and again that the mode of feeding is not of itself a cause of mortality, except as it is practiced among the poor and ignorant. Among the well-to-do and the intelligent classes the same causes of mortality do not obtain as among the poor, and hence, also, the morbidity of the infant population varies. Krieg and Senteman have shown that under the more favorable conditions of home comforts and surroundings, mortality and morbidity among bottle-fed infants are reduced fully 50 per cent. The social standing of the family affects the mortality of breast-fed infants but little, whereas it is of far-reaching influence among bottle-fed infants. The number of children in the family among the very poor is of some influence. Tugendreich has studied this question in Berlin and found that among the breast-fed infants in families containing six children, the mortality was only one-third as large as that among bottle-fed infants in families containing the same number of children, or 19.8 per cent., as compared to 43.2 per cent.

The question of legitimacy or illegitimacy of the infant is a potent factor, not only as to morbidity, but also as to mortality. The illegitimate infant suffers, as a rule, the disadvantages of poverty, indifference of the parents to its fate and the physical weaknesses with which these infants are well known to be affected. Thus Weinberg shows that the number of still-births among illegitimate infants is fully 1 per cent. higher than among infants born in wedlock. The influence of this condition is found to exert itself in infants below one year of age as a cause of inanition, atrophy, gastro-intestinal disorders, and, therefore, as a cause of mortality.

Before considering in detail the statistics at present available to me in America on infant mortality in the first month of life, it is well to consider the difference between the mortality among such infants in institutions devoted to their care and that among the people at large. I have shown that in Paris the results among the premature are much better as to infants born in institutions than among those brought to the institutions from their homes or places of birth. This is such a self-evident fact that it would seem needless to enlarge on it, yet Budin lays special stress on the increased mortality among the premature who have been subjected to reduction of temperature by exposure, and he also lays stress on feeding as an element in conserving the life of the premature. In institutional work we would expect, to a degree, a marked reduction in septic influences and a reduction of mortality among the new-born which could be traced to this cause, yet we have no statistics on this point. The feeding in maternity institutions, it would seem, should be ideal, and yet from what can be learned, at least in America, this condition is not always present. It is difficult to understand why artificial feeding should be in vogue in maternity hospitals, especially as in these institutions so many women may have an excess of food for their own infants which might be given to those who are not blessed with the maternal breast, yet such a procedure is far from being attempted. The care of the premature, at least in America, has not reached that degree of perfection which our advanced ideas demand. Thus in addition to still-births there is a proportion of deaths in these institutions which are due, as my studies seem to indicate, to avoidable causes. This is true also outside of maternity hospitals.

V. 6
1914

MORTALITY IN THE NEW-BORN IN THE UNITED STATES

The statistics of infant mortality in the United States, as in other countries, are based on the annual reports of boards of health for infants below the age of one year. None of these reports give us an idea of the mortality during the first four weeks of life, unless specially computed. In a circular letter which I sent to all the boards of health in the United States in 1912, I made inquiry as to the availability of such statistics. It was impossible to obtain any reliable information, except from two or three sources. I therefore determined to compile the desired statistics from the records of the Board of Health of New York City. In order to do this, every death certificate was inspected, and the diagnosis as to cause was obtained from these sources. This was most laborious; at the same time the results were instructive, inasmuch as the actual causes of death were obtained, and our conclusions were drawn from the causes which will be found in the tables. It must be kept in mind that there is a measure of error in this, for not every physician can make a positively correct diagnosis, nor can such diagnosis, even if made by the skilful, be absolutely relied on without a post-mortem examination. It should be borne in mind also that the board of health statistics include those of all hospitals, so that the sets of institutional statistics are duplicated in the gross statistics of the city authorities.

For the sake of conciseness, the causes of death in infants under four weeks of age must be grouped. The first great group should include the diseases of the new-born, including the prematurely born; the second, the diseases of the respiratory organs; the third, the diseases of nutrition, which would include marasmus, inanition and disturbances of the stomach and intestine; the fourth, malformations, and finally the various injuries received in delivery.

STATISTICS FOR 1911 AND 1912

The total population at this time, the number of births, still-births, illegitimate births, the number of deaths in infants under one month and the number of deaths in infants under one year, with their relation to the total population for 1911 are recorded in Table 1.

TABLE 1.—BOARD OF HEALTH OF THE CITY OF NEW YORK. BOROUGH OF MANHATTAN

Year	Number of Births	Number of Still-Births	Number of Illeg. Births	Number of Deaths 1 Mo. and Under	Number of Deaths Under One Year	Population
1911	66,537	3,438	1,559	2,732	8,223	2,389,204
1912	66,249	3,311	1,541	2,547	7,675	2,487,796

Of 66,537 births of all kinds, there were 2,732 deaths of infants in the first four weeks of life, or 4.1 per cent. of all births. That is, in round numbers, one infant in every twenty-five, or four in every hundred, died before reaching the age of one month. On its face, this is not so bad a record, until it is compared with the mortality in infants aged under one year. The number of deaths in such infants was 8,223 out of the total number of 66,537 births. Thus fully 33.2 per cent. of the deaths occurred before the first four weeks of life were completed, which is a rather startling record.

The largest number of deaths occurred in premature or congenitally weak infants. This includes also those, who, through unskilful management, died from inanition as a result of incorrect feeding, exposure, etc. There were 1,365 of these deaths, or fully one-half of the total mortality for this age. In 517 death was due to diseases of the respiratory organs, and in 206 to distinct complications occurring in the stomach or intestine, such as diarrhea or gastro-intestinal infection. This latter group must include a number of deaths in infants which belong to the first group of causes, under that of inanition. The next largest number of infants, 517, died of injuries occurring at birth or of sepsis with umbilical hemorrhage or cerebral hemorrhage resulting from instrumental delivery.

In further analyses we find among premature and congenitally weak infants that the highest mortality occurs during June, July, August and September, as a result of gastro-intestinal disease.

Syphilis does not give a large quota of deaths: only 47 in a total of 2,732.

Malformations, including those of the heart, give 134 deaths in the sum total.

In 1912 (Table 3) there were 66,249 births, with 2,547 deaths in infants aged under one month; a slightly lower rate (3.9 per cent.) than that of the previous year. Of these deaths, there were 7,675 in infants under one year. Thus, 34.5 per cent. of the deaths in infants under one year occurred in the first four weeks of life. There was an increase of 100,000 in the population, so that if this is taken into account, the total death-rate will remain about the same, or slightly less, for infants under one year.

Taking up the main groups of causes of death as indicated for the previous year, we find here also a very close correspondence. The total number of deaths occurring in the first four weeks of life being 2,547, the first group includes the premature and congenitally weak and the conditions allied thereto. Fully one-half of the deaths, or 1,388, were caused by these conditions. Respiratory diseases claimed 265 victims; gastro-intestinal diseases and allied infections, 120; malformations, including those of the heart, 156, and injuries, hemorrhages and cerebral hemorrhages, incidental to birth or following the application of forceps, 459. The latter classification in both years does not include still-births.

If we now pass in review the statistics and lessons drawn from a study of infant mortality within the first four weeks of life in a large city of two and a half millions of population, we see, first, that the greatest number of deaths at this time of life are caused by premature birth and lack of strength on the part of the infant to adapt itself to new conditions, but more than anything else the fact is impressive that of this vast number of infants, 5,279, who died within the first month of life, fully 60 per cent. died as a result of neglect, ignorance and the surroundings of poverty, for while prematurity alone may not account for a death, prematurity and exposure will. Many infants adjudged weak are worn out by incorrect feeding and inanition, and could well be saved by care from the moment of birth. This has been shown by Budin, who calculated the mortality in the class of premature infants brought into his hospital, and found the mortality in those from the outside was fully twice as great as among the premature infants born in the wards.

Respiratory diseases claim a large quota, and many of the deaths among these must have been brought about

by neglect, filth and ignorance. Aside from still-births, which are quoted by these statistics in a separate class, we cannot help being startled by the large number of deaths which are peculiar to the conditions of birth, such as umbilical hemorrhage (sepsis); atelectasis, due either to faulty care after delivery or to premature birth; injury by forceps, in which the infants die some time after birth, and finally cerebral hemorrhage, which is generally due to instrumental delivery. Fully 936 out of 5,279 deaths of infants in New York City during 1911 and 1912 were the result of some accident or instrumental injury at birth; or, one in every five deaths is directly traceable to the conditions of delivery.

This should make us pause and wonder whether the average physician outside of institutions has attained the skill that he should be expected to have at the present day. This is so delicate a subject that it demands a more thorough report of each birth before any conclusion can be reached.

I have remarked that in preparing this article I wrote to every state board of health in the United States for statistics as to the mortality of infants under one month of age. The replies showed that with few exceptions no such statistics were available, and that in their statistics all boards of health disregarded this period. I received, however, detailed sets of tables with remarks on infant mortality in the first four weeks of life from the state board of health of Michigan. These statistics are of such great interest that I quote them in full. The total infant mortality in the first four weeks of life for the years 1910, 1911 and 1912, the cause and the number of deaths from each cause for the first, second, third and fourth week of life, are shown. One hundred and thirty-three causes of death are given.

During the year 1910 there were 3,161 deaths of infants aged 1 to 4 weeks. The number of deaths of infants aged 7 days or under was 2,329, or 73.7 per cent.; 428, or 13.5 per cent., died during the second week of life; 245, or 7.8 per cent., died during the fourth week of life. The most important cause of death during the year, or the cause of the largest number of deaths, was "premature birth." From this cause, 829 infants died during their first week of life; 44 during the second; 13 during the third, and 7 during the fourth. The cause of the next largest number of deaths was "inanition." One hundred and ninety-two deaths from this cause occurred during the first week of life; 60 during the second; 31 during the third, and 26 during the fourth. The cause of death next in numerical importance was "convulsions," 217 for the year; then follow "enteritis," 141; "congenital debility," 123; "malnutrition," 103; "marasmus," 90; "pneumonia," 88; "organic heart trouble," 76, etc. Of important diseases requiring sanitary precautions, there were 4 deaths caused by tuberculosis; 3 by diphtheria and croup; 1 by scarlet fever; 8 by whooping-cough; 88 by pneumonia. Twenty-three deaths were from violence, and 70 infants died from injuries received during birth.

For the year 1911 there were 3,228 deaths of infants aged 4 weeks or less, 71.9 per cent., or 2,320, aged 7 days or under; 13.5 per cent., or 436, during the second week of life; 8.9 per cent. during the third week of life, and 5.7 per cent., or 185, during the fourth week of life.

For the year 1912 there were 3,262 deaths of infants aged four weeks and under; 2,389 during the first week; 425 during the second; 253 during the third, and 195 during the fourth week of life.

TABLE 2.—DEATH OF BABIES AGED ONE MONTH AND UNDER FOR THE YEAR 1911, IN THE BOROUGH OF MANHATTAN, NEW YORK

Cause of Death	Jan.-April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Totals
Congenital debility, icterus and sclerema, including prematurity, atrophy, marasmus, inanition, etc.	539	101	96	104	99	96	106	102	122	1,365
Erysipelas	19	4	3	2	1	0	0	2	1	32
Purulent infection and septicemia	8	1	1	1	0	0	0	0	0	12
Syphilis	19	4	4	8	4	1	2	3	2	47
General disease	12	5	0	2	4	4	2	1	0	30
Convulsions	25	2	5	2	7	4	7	6	5	63
Disease of the ears	1	0	1	0	0	0	0	0	0	2
Bronchitis	23	7	4	1	3	3	2	10	8	61
Pneumonia	83	19	17	6	6	11	12	19	21	197
Pulmonary congestion	1	1	0	0	0	0	0	0	0	2
Diarrhea and enteritis	56	5	13	12	24	16	17	14	6	163
Ulcer of the stomach	0	0	1	0	0	0	0	0	0	1
Hernia, intestinal obstruction	0	2	1	0	0	0	0	0	0	3
Other diseases of the intestine	43	0	1	0	0	0	0	1	0	45
Organic disease of the heart	25	0	1	0	0	0	0	0	0	26
Congenital malformation, including spina bifida	13	10	10	18	8	14	10	15	10	108
Meningitis	6	1	0	1	0	0	1	0	0	9
Embolism and thrombosis	0	0	1	0	0	0	0	0	0	6
Tetanus	5	1	0	0	0	0	0	0	0	6
Causes peculiar to early infancy, including umbilical hemorrhage, atelectasis, injury by forceps at birth, etc.	176	42	44	41	35	37	55	43	43	516
Cerebral hemorrhage	0	0	0	1	0	0	0	0	0	1
Disease of the liver	1	0	1	0	0	0	0	0	0	2
Disease of kidney and adnexa	5	0	0	1	0	0	0	0	0	6
Acute nephritis	0	1	0	0	0	1	1	0	0	3
Disease of mouth and adnexa	1	0	1	0	0	0	0	0	0	2
Diseases of the pharynx	0	0	0	0	1	0	0	0	0	1
Diseases of the skin and adnexa	0	1	0	0	0	0	0	0	0	1
Homicide by cutting or piercing instruments	0	0	0	0	0	0	0	1	0	1
Homicide by other means	1	3	1	0	0	0	3	2	0	10
Whooping-cough	0	0	2	1	0	1	0	0	0	4
Effects of heat	0	0	0	7	0	0	0	0	0	7
Acute abscess	0	0	0	0	1	1	0	0	0	2
Acute poisoning	1	0	0	0	0	0	0	0	0	1
Disease of the nervous system	0	0	0	0	0	0	1	0	0	1
Cause unknown	0	0	0	1	0	0	0	0	0	1
										2,732

V. 6
1914

As in 1911, "premature births" caused the largest number of deaths, 930 in 1911, and 1,125 during 1912.

The table shows that the excessive mortality during the first week is almost entirely caused by premature birth, congenital malformation and feeble vitality. Over four-fifths of the deaths in the first week were recorded as from these causes.

"Some of the causes of infantile mortality are common to every locality, such as prematurity of birth and congenital defects. The health conditions under which the mother lives have an undoubted influence on the vitality of her progeny, and on the occurrence of premature birth. Hereditary influences, such as syphilis, or the degradation and drunkenness of parents, are also of importance. The inexperience with and neglect of their infants by mothers is a most important factor in whole number of deaths in the first four weeks. The second week shows a mortality of 13.5 per cent. up to 8 per cent. during the third week, and 5 per cent. to 7.8 per cent. during the fourth week of life. In the main these statistics confirm the conditions causing death as shown in statistics drawn from large numbers of population, in that the causes of the greatest number of deaths are prematurity, inanition, birth injuries, respiratory diseases and diseases of the gastro-intestinal tract. It can thus be seen that for large communities the statistical showing of the causes and number of deaths at the time of life we are discussing remains constant, and the causes are, at least in America, also constant. If this is true of all localities, it would seem that measures to reduce the infant mortality might well be uniformly promulgated, and yet how this is to be

TABLE 3.—DEATH OF BABIES ONE MONTH AND UNDER ONE MONTH OF AGE FOR THE YEAR 1912, BOARD OF HEALTH OF NEW YORK, BOROUGH OF MANHATTAN

Cause of Death	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Congenital debility, icterus and sclerema, including prematurity, atrophy, marasmus, inanition, etc.	120	113	120	95	134	111	125	121	121	121	102	105	1,388
Erysipelas	1	2	4	3	0	3	3	2	0	0	1	0	19
Gangrene	0	1	0	0	0	0	0	0	0	0	0	0	1
Syphilis	6	4	6	9	4	3	3	2	3	4	8	5	57
Gonococcus infection	0	0	0	0	1	0	0	0	0	0	0	1	2
General disease, including purpura, hemorrhagica, diabetes insipidus, etc.	1	0	0	0	0	0	0	0	0	0	0	0	1
Convulsions	8	0	3	1	2	5	3	4	0	4	0	2	32
Bronchitis	13	6	8	2	4	0	2	3	3	5	5	5	56
Pneumonia	28	26	14	26	6	8	10	10	10	21	26	22	207
Influenza	1	0	0	0	0	0	0	0	0	0	0	0	1
Whooping-cough	0	0	0	0	0	0	0	0	0	0	2	0	2
Diarrhea and enteritis	4	6	13	11	11	7	14	13	14	10	4	7	114
Disease of the stomach	0	0	0	0	0	0	0	0	0	0	0	3	3
Hernia, intestinal obstruction	0	1	1	0	0	0	0	0	0	0	0	1	3
Congenital malformation, including spina bifida, congenital malformation of heart	13	11	20	3	17	12	16	11	8	17	15	13	176
Disease of the skin and adnexa	1	0	1	1	0	1	1	0	0	0	0	1	6
Disease of kidney and adnexa	0	0	0	0	0	0	0	0	0	0	0	1	1
Disease of the liver	0	0	0	0	0	0	0	1	0	0	0	0	1
Meningitis	0	0	0	0	0	0	0	0	0	0	1	0	1
Softening of the brain	0	0	0	0	0	0	0	1	0	0	0	0	1
Tetanus	3	0	0	0	0	0	0	1	0	0	0	0	4
Causes peculiar to early infancy, including umbilical hemorrhage, atelectasis, injury by forceps at birth	43	47	50	38	45	31	35	37	20	45	31	37	459
Homicide by cutting or piercing instruments	1	0	0	0	1	0	0	0	0	1	0	0	3
Homicide by other means	2	0	4	0	2	1	0	0	0	0	1	0	10
External violence	1	1	0	0	0	1	0	0	0	0	0	0	3
Accidental drowning	1	0	0	0	0	1	0	0	0	0	2	0	4
Absorption of deleterious gases	0	1	0	0	0	0	1	0	1	0	1	1	5
Acute poisoning	0	0	0	0	0	0	0	0	0	0	0	0	0
Acute abscess	0	0	3	0	0	0	0	0	0	0	0	1	4
Disease of organs of locomotion	0	0	0	0	0	0	0	0	1	0	0	0	1
Diseases of the lymphatic system	0	1	0	0	0	0	0	0	0	0	0	0	1
Cause of death not specified	0	1	0	0	0	0	0	0	0	0	0	0	1
													2,547

infantile mortality. Long hours of service of mothers among the industrial classes under improper conditions also is most serious in effect. As regards inexperience, it has been suggested that the deaths of first-born children should be separated from the general infantile mortality. Such returns would undoubtedly show that the rate of death in the first-born is higher than that in the other children; but some of the excess might be attributed to greater difficulty in parturition as well as to parental inexperience. Improper food and methods of feeding are responsible for a large amount of mortality in infants. When improper feeding is a chief factor in producing infantile mortality, a large proportion of the deaths are caused by diarrhea and digestive disturbances. Convulsions are a common result from the irritation produced by improper food."

The points of greatest interest are that the first week of life shows the greatest mortality, the number of infants dying being 71 per cent. to 73 per cent. of the done is one of the most difficult problems to be considered at present.

The measures taken toward the prevention of prematurity must consider furthering the strength as well as the health of the mothers. If the mother is given rest, good food and quiet surroundings the child will benefit. Pinard, observing women in France who worked up to the time of their confinement and women who had rest and care for days or weeks before confinement, proved that in the latter the child was benefited and weighed more at birth. Ballantyne in his work on "Antenatal Pathology and Hygiene," has advocated the establishment of homes or retreats where mothers about to be confined might be treated by hygienic methods and aided by pertinent suggestions in order to avoid the evil consequences to the fetus from opposite conditions.

There is a tendency here in America to give more and more attention to the antenatal aspect of infant mortality by the establishment of retreats for pregnant

women on lines similar to those suggested by Ballantyne. No measures will be complete which do not also take into consideration the treatment of both parents for any constitutional disease, such as syphilis, which may be co-existent at the time of pregnancy. Good food, surroundings and teaching the duties of motherhood to those who are to see their first-born, will do much to reduce the mortality of this period.

Of deaths resulting from inanition, marasmus or infantile diarrheas, none can gainsay that these infants die not so much as a result of any form of feeding, especially artificial feeding, as on account of the wide-spread ignorance and even indifference in carrying out the methods of artificial feeding. I certainly believe that among the better situated, where nurses and intelligence can be placed at the disposal of even the premature infants, the results of artificial feeding are not by any means discouraging. With the infant at full term, I feel that from a sociologic point of view artificial feeding by a well-taught mother or nurse is even preferable to a wet-nurse. Wet-nursing as a rule means the death of the child of such a nurse; thus one is sacrificed who has by nature the right to the breast.

The propaganda for the care of the premature and the methods for conserving its strength has not reached that point, at least in America, which would encourage us to hope for better results than we now obtain. The education of the public and the physician on this subject is still to be accomplished. As previously remarked, but few maternity institutions give this subject and even that of feeding the attention it should receive. The question of infant-feeding, the encouragement of maternal nursing, and the education of the general public in methods of feeding is a problem of to-day and much has been accomplished, although much more remains to be done. Social service, milk-stations, lectures to mothers, all will in time tend to reduce this cause of infant mortality.

I have intimated that the perfection of our methods in delivery of the infant and the wide-spread adoption of methods of asepsis in institutions and among the laity have tended to reduce mortality from this cause. At the same time when we contemplate the large number of deaths consequent on operative interference during labor, it is to be feared that there is still much to be accomplished through the instruction of the physician in this direction. I feel also that many of the deaths due to diseases of the respiratory organs could well have been prevented by attention to detail in the care of the newborn.

30 East Sixty-Second Street.

Strenuous Athletics and the Heart.—The hypertrophied heart is more liable to acute cardiac dilatation than the normal heart. At the state university, during the past two years, there have been four cases of acute dilatation in athletes and only one in the non-athletes, although relatively few students take part in the major college sports. In case of severe fever these large hearts seem to be especially vulnerable. In the graduates from Annapolis it has been found that there are six times as many deaths from heart-disease among athletes as among non-athletes. If physical training is to be made compulsory in our schools and violent athletic contests are to be incited by crowds and publicity, a serious duty devolves on the medical profession to study the results carefully and, in case of each individual youth, to supply that balanced judgment concerning the value of various kinds of physical exercise which only those can have who follow human life from the womb to the winding-sheet.—C. R. Bardeen, M.D., *Wisconsin Med. Jour.*

AN EPIDEMIC OF SMALL-POX IN SONORA, MEXICO

LLOYD MILLS, M.D.
LOS ANGELES

A paper based on practical experience with small-pox and giving further striking evidence of the remarkable protective value of vaccination is never untimely. This is especially true in these days when common ignorance of the disgusting horror of the ravages of small-pox has caused so much ill-advised and even fanatical opposition to the one essential weapon against it, vaccination.

This paper is also timely in that it offers some corollaries on frequent Mexican medical abuses, the results of which may be brought forcibly to our notice in case of intervention by our country in the internal affairs of Mexico.

In October, 1912, I was in the Yaqui Valley, Sonora, engaged in making a climatic and hygienic survey of the region for a large irrigation project.

In the spring of 1912 small-pox had become epidemic in a group of towns about eighty miles to our south, but the spread had been partly limited by the habit of sleeping outdoors during the hot weather. With the cooler autumn evening the families began to herd together within their adobe huts, and because of this closer contact the epidemic renewed itself fiercely. No organized vaccination had ever been done in this region, and small-pox had always been present. No epidemic of magnitude had occurred, however, for a number of years, and the entire youth of the community offered rich virgin material for the loathsome invasion which now began. When this reached the point at which many new cases were appearing daily and deaths were frequent, a general exodus took place from these towns, spreading the disease freely in all directions, for no quarantine was attempted. After hundreds of deaths had occurred, one or two incompetent Mexican physicians in the government employ were put in charge of the situation, but did nothing to limit the contagion.

There are five pueblos in the valley lands of the Yaqui River with populations of from one to three thousand. These pueblos are named Cocorit, Bacum, Torin, Potam and Vicam. The contagion first entered the valley at the pueblo of Cocorit by means of a family which came by rail from the heart of the infected district. Before the local authorities became alarmed, about sixteen cases were scattered throughout the town, and then an incompetent French physician in the government service was placed in charge. When not intoxicated he was devising means of grafting from the town and state in collusion with the mayor and the mayor's secretary. Absurd charges were made for office rental, carriage hire and medicines. Fictitious expense accounts were created for food-supplies for whole families, and for several weeks all that was actually done toward limiting the epidemic was an infrequent visit to some of the infected homes, where spirits of camphor was given the unaffected members of the family to rub on their hands, face and clothing.

During all this time there was the freest of intercourse between the patients and all their relatives and friends, members of families with sick went freely to the church, the stores and to their usual meeting-places, and of course hygienic conditions were primitive in the extreme. Consequently the incidence of the disease rose steadily until there was a daily average of about forty

V. 6
1914

cases of active small-pox and a daily death-rate of from five to twelve cases.[1]

The high mortality finally forced the authorities to a show of greater activity, so a large supply of vaccine points was procured, the date of the expiration of the vaccine being June, 1912, a date then about eight months past. Of the several hundred persons who applied for vaccination about half a dozen were successfully vaccinated, although, as I found later, about 92 per cent. of this town of nearly three thousand people, had never been vaccinated and had not had small-pox.

Finally the epidemic began to have a commercial phase, for the large outlying Mexican ranches began to suffer severely. On the large hacienda owned by one Jesus Parada, over 80 per cent. of the workmen and their families died.

At the outset of the epidemic I had thoroughly vaccinated the employees of the irrigation project itself and of the near-by American ranches (about a thousand in all), and in this well-vaccinated group but four mild cases appeared. This contrast was so obvious and amazing to the Mexican ranchers that when, to prevent United States quarantine against the region, I volunteered to rid the entire township of the pest within thirty days, without charge for my service, and asking from the town only the cost price of the necessary fresh vaccine and of the few simple disinfectants and remedies, the few of the ranchers who dared brave the wrath of the local cabal went over its head to the governor. To the Mexican mind it was incomprehensible that anybody could volunteer to do gratis any service involving intense personal activity, loss of time and considerable personal danger from disease and violence. They reasoned that some at present hidden means of extracting money would surely come to light, and it was only after repeated letters to and interviews with the goverament that my appointment as sanitary delegate was made.

While waiting for my vaccine,[2] I arbitrarily divided the town into quarters and had a careful census taken, with the number of persons in each family clearly indicated.

Then began a house-to-house vaccination in which each person from this census list had to be accounted for at once. Everybody was vaccinated, regardless of pock-marks or old vaccination scars, and vaccination was repeated once if unsuccessful the first time. Among the Yaqui Indians, who believe that one should take small-pox as the ordinary Mexican takes a bath, a trying procedure which must be done here once in a lifetime, there was some sharp opposition. This was aggravated by the report, traced later to the mayor, that it was my intention to kill their children. Because of this I twice narrowly escaped being stabbed, a watchful guard averting the first attack, and once I turned intuitively while vaccinating a Yaqui infant, to find the father almost on me with his knife. After being disarmed, he was vaccinated.

At the end of nine days this universal vaccination was completed, my days beginning at daybreak and lasting far into the starlight.

When the census was made 102 active cases were found in the town. Four days later when I began vaccination there were 127 active cases, and the high tide of 156 active cases was reached on the third day of vaccination. The last case of small-pox contracted within the town appeared five days after ending the vaccination, or just two weeks after the beginning of my attack on the contagion. At the time of writing this paper, Nov. 8, 1913, this well-vaccinated pueblo remains entirely free from the disease, although the surrounding pueblos without exception are being decimated. Cases have been imported, but no case has since occurred among the native resident population.

The military town of Torin, with its staff of Mexican army doctors and its constantly changing bodies of troops, suffered worst of all the pueblos. It established no quarantine, no vaccination was done, and at present the disease is running an unchecked and virulent course, which will probably continue until it has exhausted the human material. One resident stated to me that "everybody has had or is having small-pox, even to the horses."

This paper is not intended as a clinical study of small-pox. The stress of the single-handed labor was too intense to permit of anything but general impressions, except in the matter of observation of the types of disease and of data relative to the effect of vaccination, which data I was most careful to keep.

In the town of Cocorit, during the two weeks of my active campaign, there were 229 cases of small-pox with 82 deaths, a mortality of 31 per cent.; 71 of the deaths were due to purpuric small-pox between the fourth and seventh day after onset of the symptoms. Nearly all of these patients had an intense diffuse bronchitis, extensive ulcerations of the pharynx and soft palate and greatly swollen tongues. Six died from confluent small-pox. Two deaths occurred from bronchopneumonia, one from purulent inflammation of the knees, ankles, elbows and wrists with death from septicemia and two from abortion during the disease, the fetuses having no eruption.

In this town I vaccinated 2,878 persons, of which number about 5 per cent. had marks of early vaccination, and about 3 per cent. more or less distinct pock-marks. One man of 72, who had had small-pox over fifty years previously, and on whom the pocks showed clearly, was successfully vaccinated, and two other elderly people so marked, reacted, though very moderately. The group of 144 previously vaccinated persons had an average vaccination period six years past. Patients with strongly marked scars were seldom successfully revaccinated, though there were several exceptions to this. Of the total number, less than 25 per cent. were successfully revaccinated, and but two of the whole group contracted small-pox. One, a child, successfully vaccinated three months previously, died of confluent small-pox. The other recovered after a very mild attack.

Out of the entire pueblo forty-eight persons who developed small-pox were vaccinated during their stage of incubation. Thirty-nine of them recovered from mild attacks of discrete small-pox. Two recovered after severe attacks of combined vaccinia and confluent small-pox; one died of confluent small-pox and vaccinia; one died of purpuric small-pox and five died of combined purpuric small-pox and vaccinia, the vaccine having been administered too late in the last seven cases. Most of the pueblo had been exposed and numerous other persons must have been vaccinated during the first few days of the incubation period of the disease, and must have been protected from small-pox by the development of the vaccinia.

In over 80 per cent. of the 2,878 cases vaccination was successful at the first visit. Excluding the cases of pre-

1. There was no way of obtaining accurate details of the situation at this time, for surreptitious burial was the rule and the vital statistics of Mexican towns are notoriously incorrect; hence these figures are approximate.

2. I used only vaccine lymph in capillary tubes made by a Berkeley laboratory, for I had found vaccine points to be far less certain.

vious small-pox and previous successful vaccination, less than 1 per cent. of the remainder resisted revaccination.

Altogether, during this experience I vaccinated over five thousand persons, practically all of whom I saw subsequently. Only rarely was a protective dressing used over the vaccination site, for I had neither sufficient time nor materials for dressings during most of this intense work. Yet even amid the reeking filth of Mexican home life there were complications following vaccination in but eighteen cases. In thirteen of these, deep ulcers developed at the site of inoculation; a baby scratched the pustule and received multiple inoculations; there were three cases of deep abscess formation and one Indian child died of tetanus following the attempts of its mother to rid the arm of vaccine by plastering it with foul mud of the village street.

This experience is remarkable because it offers so exact and specific an example of the value of vaccination, unaided by any other means, in limiting a fairly virulent epidemic of small-pox. Between the time of the onset of the disease in the pueblo and the finish of the vaccination approximately 15 per cent. of the original population must have been affected. Considering the rapid progress which the epidemic was making, as shown by the number of cases already in the incubation stage at the time of vaccination, it is reasonable to assume that practically the entire unvaccinated part of the population would have contracted the contagion eventually, just as occurred in all the adjacent pueblos. Yet within two weeks this epidemic, which had already reached alarming proportions and threatened to become most formidable, was absolutely and permanently eliminated.

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UNIVERSAL CIRCUMCISION AS A SANITARY MEASURE

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Of late there has been noticeable a decided tendency on the part of some medical men, mostly pediatricians, to condemn the ancient practice of ritual circumcision. This tendency is amply demonstrated in the statement of the late Professor Maas, and apparently approved by Dr. L. Emmett Holt,[1] that "it is the duty of the physician to raise his protest against the performance of ritualistic circumcision in every case."

When we examine into the reasons underlying this remarkable dictum of Maas, we find that the opposition is based on the possibility of infections being carried to the infant by careless or ignorant operators, to whom the rite of circumcision is sometimes entrusted.

Holt[1] states that after a search through medical literature with the assistance of Drs. Alan Brown and Stafford McLean, he was able to find references or reports of forty cases of circumcision tuberculosis in addition to the case he himself cites. It must therefore be apparent when we consider the millions of Jewish and non-Jewish children who have been subjected to this ritual operation, without untoward incident, that the number of infections with tuberculosis must be rare indeed. The same is true of syphilis, the second disease which is occasionally transmitted through circumcision.

When, however, the opponents condemn the practice of circumcision, *in toto*, because of the possibility of these infections, it seems necessary to point to the other side of the picture; it is, therefore, the purpose of this paper to demonstrate that circumcision, far from being the menace that some of these observers would have us believe, is, on the contrary, a most beneficent practice from the sanitary aspect, and that it should be encouraged in every possible case, whether it be done as a ritual act or as a purely sanitary measure.

It is not my purpose to condone or even seek pardon for the acts of those who, in the performance of ritual circumcision, have spread infection of any kind whatever. These men should be regarded as unfit to practice this act, and should be debarred from performing it. The Jewish Community (Kehillah), representing nearly a million Jewish residents of the city of New York, having been made aware of the occasional infections we are discussing, is even at this moment taking steps to prevent their further occurrence by seeking to place the practice of ritual circumcision on a thoroughly modern basis. It is hoped to accomplish the desired end by the formation of a board of physicians, consisting of well-known physicians and surgeons, who will instruct the "Mohelim"[2] in surgical technic, particularly the principles of asepsis, hemostasis and general hygiene. In this way, only those who have satisfied the board of physicians of their knowledge and practice of the rules of asepsis will receive the moral sanction of the Jewish Community to perform the ritual, and thus the unfit or ignorant will be weeded out.

In fact, the Mohelim themselves have asked for such supervision and instruction. Rev. Dr. J. L. Magnes,[3] president of the Kehillah (Jewish Community), says:

> The Kehillah was approached by the Society of Mohelim for the purpose of organizing a board of recognized physicians and surgeons to whose authority in hygienic and medical matters the Mohelim were to submit. The plans of the Society of Mohelim include the formation of classes for instruction in hygiene and allied subjects, to the end that a certificate may be issued by the board of physicians and surgeons to such Mohelim as satisfy all requirements. A list of certified Mohelim in the office of the Kehillah placed at the disposal of the community would doubtless surround the rite of circumcision with all necessary safeguards.

It is, therefore, apparent that the men who perform the rite are themselves anxious to avoid any untoward accidents in the performance of this little operation, and are willing to cooperate in weeding out those who are either diseased or ignorant of the primary surgical rules of asepsis. It should be remembered that these men are remarkably skilful, as a rule, in the performance of circumcision, and I venture the opinion that their skill and dexterity in operating on infants are by far greater than that of any surgeon. This is due to their extensive experience and to the fact that they are trained to do nothing else. If, therefore, a few of them perform their duties in disregard of modern principles of asepsis, the criticism should be leveled at them, as individuals, and not at circumcision *per se*. One might just as rationally denounce the operation of laparotomy and protest against its performance, just because towels, artery clamps and other foreign bodies have been left in the abdominal cavity by careless surgeons.

The infections with syphilis and tuberculosis, when they do occur, are caused by these few Mohelim who

1. Holt, L. Emmett: Tuberculosis Acquired through Ritual Circumcision, THE JOURNAL A. M. A., July 12, 1913, p. 99.

2. "Mohelim" is the plural of "Mohel," by whom the rite is performed.

3. Magnes, J. L.: Fourth Annual Report of the Kehillah (Jewish Community), April, 1913.

V. 6
1914

still adhere to the ancient practice of stopping the bleeding by sucking the edges of the wound. But this practice is merely a relic of ancient times, and most of the modern operators never do it. I am informed by several rabbis and Mohelim that neither the ritual nor the rabbinical law demands that the wound shall be sucked, if another method of hemostasis can be safely employed. In this connection, Rabbi H. Pereira Mendes[4] of New York writes:

> Less than a single century ago, hemostasis by hot oil or hot pitch was countenanced by accepted surgery. It required time to bring about changes to modern methods. Much less time will be required to improve the methods complained of in "ritualistic" circumcision, particularly when we remember not only that many Jewish operators in America use modern methods of asepsis, and that in such countries as England, France, Germany and Scandinavia they may not otherwise practice, but also that the Jewish religious law insists on every precaution in matters of health and demands that when "Sekanah" or "danger" to health is critically involved, any religious custom and any duty not may, but must, be overridden.

I have the assurance of Rabbi Philip Jaches of New York, who has successfully performed more than seven thousand ritual circumcisions, that the ancient practice of sucking the wound is considered obsolete, and that cotton and gauze, wet with antiseptic solutions, are being commonly used for hemostasis.

In view of these facts, I feel justified in saying that the rite of ritualistic circumcision should not be condemned, but rather those who perform it in contravention to the modern rules of asepsis and the spirit of the Jewish law. That these faulty operators are few and gradually disappearing must be evident by the generally increasing demand on the part of parents for modern surgical methods in the performance of the rite.

At present, however, I am principally concerned with the operation of circumcision as a necessary sanitary measure. Not only am I heartily opposed to any curtailment of the practice of ritual circumcision, but I also advocate its universal employment in all male children, whether Jewish or Gentile, from a purely sanitary and health-giving point of view.

My attention was first attracted to this subject some years ago, when I saw the striking difference in the amount of local venereal ulcers treated at the Good Samaritan Dispensary and the Beth Israel Hospital, at which the patients are almost entirely Jewish, as compared with the vastly larger proportion which I saw while working with Chetwood at the Polyclinic Hospital and in my own service at the West Side German Dispensary, at which nearly all the patients are non-Jewish. Not only was the proportion of syphilis and chancroid much less among circumcised patients, but also the general cleanliness of the parts and the absence of serious local complications due to the presence of a foreskin, made a lasting impression on my mind, with the result that universal circumcision is, in my opinion, an absolute necessity, when we consider the general welfare of the race. Specifically, my reasons for advocating universal circumcision are as follows:

1. It is a great aid to cleanliness of the genitals.
2. It is a decided prophylactic against infection with syphilis and chancroid.
3. It prevents in great measure the development of venereal warts, herpes, epithelioma and other growths.
4. It offers a diminished tendency to masturbation, nocturnal pollutions, convulsions and other nervous results of local irritation.
5. It diminishes local complications in the presence of venereal diseases.
6. It makes the "fourth venereal disease" impossible.
7. It prevents the development of phimosis and paraphimosis, with their attendant complications.

Let us consider these items at greater length:

I. AN AID TO GENITAL CLEANLINESS

Surely, any one who has worked in a male clinic must have observed that very few of the uncircumcised, at least among the poor and middle class, pay proper attention to the cleansing of their genitals. Times innumerable, in my experience, the stench arising from the confined and retained balanic secretions has been almost unbearable, even in the absence of any particular disease. Add to this the increased element of inflammation in balanitis associated with any one of the venereal diseases, and the argument for circumcision as a measure of hygiene must be apparent to any but a man deprived of his olfactory sense. Not infrequently adhesions form between the glans and the prepuce; in these cases, retraction is next to impossible and there is a constant accumulation of the secretions, with all that the term conveys. I have encountered hundreds of men who have seldom or never retracted the foreskin for cleansing purposes.

II. AS A PROPHYLACTIC AGAINST SYPHILIS AND CHANCROID

I am a firm believer that men who have been circumcised are less prone to infection with these diseases because of that fact. It is not necessary to go into a discussion of the obvious reasons for this view; suffice it to say that this view is also held by most authorities on venereal infections, as I shall show below. For further substantiation of this belief, I have searched my private records, with more than striking result. The records of 800 patients treated in my office were studied; of these, 400 were circumcised and 400 uncircumcised. In order to determine whether or not the Jewish (circumcised) patients suffered equally with their Christian (uncircumcised) neighbors from syphilis and chancroid (gonorrhea not being considered), I found the interesting data given in the accompanying tabulation.

SYPHILIS AND CHANCROID IN THE CIRCUMCISED AND UNCIRCUMCISED

CIRCUMCISED PATIENTS

Disease	Cases	Per Cent.
Gonorrhea	321	78
Syphilis and chancroid	79	22
Total	400	

UNCIRCUMCISED PATIENTS

Disease	Cases	Per Cent.
Gonorrhea	238	59
Syphilis and chancroid	162	41
Total	400	

It will thus appear that of 400 circumcised patients, 78 per cent. sought treatment for gonorrhea and 22 per cent. for syphilis and chancroid; whereas of the same number of uncircumcised patients, 59 per cent. sought treatment for gonorrhea and 41 per cent. for syphilis and chancroid. The difference must be strikingly convincing. Many years ago Hutchinson observed in the Jews' quarter of London that the proportion of Jews to Christians among the out-patients was as one to three; at the same time, the proportion of cases of syphilis in

4. Mendes, H. Pereira: Correspondence, THE JOURNAL A. M. A., Sept. 6, 1913, p. 786.

the former to the latter was one to fifteen.† It has also been pointed out by Hutchinson, Fournier, Clerc and other authorities[5] that the foreskin is the favorite site for about 75 per cent. of primary chancres. These data show conclusively that there is far more syphilis among the uncircumcised than among those who have been circumcised. Nevertheless, it may be charged that figures can be distorted to prove almost any contention. In order, therefore, to forestall this possible criticism of the data just quoted, I have fortunately been able to secure the opinion of professional colleagues in various parts of the country, whose experience in the treatment of diseases peculiar to men has enabled them to determine whether or not their uncircumcised patients were more often infected with syphilis and chancroid than those who had been circumcised. In response to my inquiry, these gentlemen kindly wrote as follows:

L. DUNCAN BULKLEY, New York: I have observed a very much larger proportion of syphilis and chancroid among the uncircumcised than in those who have been circumcised.

E. G. BALLENGER, Atlanta, Ga.: I regret that I have not statistics which bear directly on this point. The tender, often macerated, condition of the quasimucous membrane of the glans penis and foreskin, especially in the region of the frenum, undoubtedly affords a more favorable site at which organisms may gain entrance than does the hardened skin of the circumcised. The abrasions and so-called "hair-cuts" are also more likely to occur in the uncircumcised than in the circumcised. More than 75 per cent. of cancers of the penis are observed when phimosis exists in the uncircumcised. Masturbation appears to be less prevalent in the circumcised.

F. BIERHOFF, New York: I would say that although I have not kept any statistics with reference to the relative frequency of syphillis and chancroid among the circumcised and the uncircumcised, I am positive that both of these diseases are more frequently encountered among the latter class. This is particularly true of chancroid.

CHARLES H. CHETWOOD, New York: Highly in favor of the operation of circumcision as a sanitary measure.

HUGH CABOT, Boston, Mass.: I have no doubt that these infections are less common in proportion to exposure in the circumcised than in the uncircumcised.

B. C. CORBUS, Chicago: You know as well as I do, that for hygienic measures, circumcision should always be advised. In regard to the occurrence of infection in those that are not circumcised as compared with those that are, I am truly unable to draw any definite conclusions. The "fourth disease" is absolutely one infection that cannot exist on an individual who has been properly circumcised. As the infecting organism is anaerobic it must require a closed foreskin for the growth of the organisms.

B. ERDMAN, Indianapolis: There is a question in my own mind as to the question of circumcision preventing, so to speak, gonorrhea and chancroid. I don't believe the uncircumcised suffer more from these infections than the circumcised, but in syphillis the matter is entirely different. I want to say that in the last thirty-three cases of syphilis, recent infections, having seen the sore from three to eighteen days after appearance (no extragenital lesions considered), twenty-seven were in uncircumcised patients and six were in circumcised (four were Jews). There is no doubt in my mind but that circumcision and plenty of soap and water are valuable in the prevention of lues.

GEORGE HENRY FOX, New York: Many years ago I noticed in my clinics that circumcised patients rarely appeared with local venereal diseases. I still have the impression that the prepuce, in a certain class of patients, predisposes to infection with chancre and chancroid, although I have no data to offer on which a ratio of immunity could be based.

EUGENE FULLER, New York: I think very favorably of circumcision as a sanitary and prophylactic measure. I think there is more syphilis and chancroid among the uncircumcised. I cannot state offhand the proportion. The preputial orifice and the mucous surface of the parts removed in all instances of properly performed circumcision are the prevailing seat of venereal sores among the uncircumcised. Abrasions during coitus, without which chancre and chancroid cannot result, occur much less frequently in connection with those properly circumcised than in connection with those who are not. Then again, circumcision removes all danger of balanitis. All persons afflicted with balanitis in a severe or chronic grade present a raw surface at all times. Consequently such men can hardly escape being inoculated with a venereal sore in sexual contact with an infected woman.

M. L. HEIDINGSFELD, Cincinnati: I believe that the uncircumcised is more susceptible to the initial lesion of syphilis and chancroidal infection for the following reasons: Abrasions and macerations, the open door to infection, are more common in the latter for mechanical reasons and lack of cleanliness. Again, I consider the normal unbroken skin the surest protection to exposed infection. Although syphilis and soft chancre infection is by no means of rare occurrence in my circumcised clientele, and possibly equally large, for personal reasons, with that of the uncircumcised, it is evident to me that the circumcised temperamentally are more given to lascivious vice and expose themselves to a greater degree than the uncircumcised.

F. J. LEVISEUR, New York: Looking back over a large experience of many years, I may state as my belief that the Judaeus Apella is less frequently affected with chancroid. It is not so, however, with syphilis. I believe that the latter occurs fully as often in those who have been circumcised as in those who have not, if not oftener.

H. H. MORTON, Brooklyn: I am thoroughly in favor of circumcision as a hygienic measure and also as a prophylactic against infection with venereal disease, particularly chancroid and chancre. I have also noted that in the great number of amputations of the penis which I have done for epithelioma of the glans, the patients, with but one exception, always had long foreskins.

E. WOOD RUGGLES, Rochester, N. Y.: Since engaging in private practice here fifteen years ago, I have observed a much smaller proportion of chancres among Hebrew patients, who constitute a rather large part of my clientele, than among Gentiles. As to a definite ratio, I cannot state positively, but should say that, roughly speaking, not over a fourth as many cases of penile chancres and chancroids occurred among the circumcised. There can be no doubt that the cleanliness, the freedom from balanitis and herpes and the toughened condition of the skin caused by constant friction against the clothing, produces a very decided protection against these diseases.

G. K. SWINBURNE, New York: When I first took my clinic at the Good Samaritan Dispensary in 1889, I had been working in several other clinics. I had also spent six months in Vienna in the clinics there. After I had been working for some time at Essex Street, I noticed that in proportion to the amount of gonorrhea I was treating, I was not getting anything like the proportionate amount of chancroid and syphilis that I saw at Chambers Street, or the Vanderbilt or Presbyterian clinics. This was very noticeable, and I believed it to be due to the fact that the vast majority of my Essex Street patients had been circumcised. Since 1889 I have not had occasion to change my views. I should not wish, however, to attempt to state proportions in figures; suffice it to say that the difference was very striking.

H. J. F. WALLHAUSER, Newark, N. J.: By far the greater number of initial lesions that have come under my observation were located in the prepuce. I have also several times traced an infection to a preexisting herpes preputialis, and very frequently patients have informed me than an abrasion occurred during coitus which healed rapidly and was followed by the appearance of the initial lesion on the site of the injury. Deducing that the uncircumcised are more susceptible to superficial injuries on account of a mild form of inflamma-

† Remondino, P. C.: History of Circumcision. Philadelphia, F. A. Davis Company, p. 192.
5. Alexander: Die Hygienische Bedeutung der Beschneidung, Breslau, 1902.

V. 6
1914

tion which is nearly always present, especially in men in whom the glans is completely covered, there can be very little doubt as to the greater liability to infection in this class of individuals.

M. W. WARE, New York: I am wholly unbiased in my opinion when I say that circumcision is absolutely no safeguard against any of the venereal diseases that human flesh is heir to and which exist in equally as large a number among the circumcised as those not circumcised. Thus I have seen in twenty years of dispensary and hospital practice a surprisingly large amount of syphilis in its late manifestations (tertiary) among the parent stock of the emigrant Russian Jew, as well as recently acquired syphilis in the sons of the next generation. Perhaps the chancroidal infections are not quite so common, and though your inquiry did not cover gonorrhea, I venture the opinion that the organism of Neisser does not discriminate between the urethras of circumcised or uncircumcised penes. The following personal experience may interest you: Recently the son of orthodox Jews, a graduate of Harvard, whose son I was about to circumcise, told me that he was having the ritual done surgically at least, to appease the irate grandfather (paternal), but forthwith he proceeded to rouse the ire of said grandparent by telling him that circumcision was a relic of barbarism in so far as it signified a sacrifice on the altar of God which called for an offering of lamb's blood, but for which the blood of the new-born male on the tenth day was substituted by the performance of the circumcision. I could cite many more reasons which speak against circumcision from any point of view. In conclusion, I would be quoted as characterizing circumcision as a fetish surviving from ancient times.

To these views may be added the opinion expressed by G. Frank Lydston,[6] Chicago:

> Circumcision is a most commendable practice. Whatever religious views one may hold, it must be conceded that Moses or whoever devised the operation was a hygienist of no mean pretensions. The Jews are social hygienists in many ways, some of which might well be imitated by the Gentiles, but none of their religious customs is quite so sensible as the rite of circumcision. Circumcision promotes cleanliness, prevents disease, and by reducing oversensitiveness of the parts tends to relieve sexual irritability, thus correcting any tendency which may exist to improper manipulations of the genital organs and the consequent acquirement of evil sexual habits, such as masturbation.

I may likewise add the opinion of E. M. Corner,[7] the well-known English surgeon, who is a firm believer in the value of circumcision, as is evidenced by these words:

> For choice, it (circumcision) is an operation which should be done in early babyhood. Then the operation is borne well, giving the minimum of discomfort, no anesthesia is required, and usually no stitches. Up to 6 months of age, a healthy baby is very easily nursed, as it leads, more or less, the life of a vegetable: feeding and sleeping. On the other hand, there is no doubt that many cases of apparent phimosis in babies get well from the natural stretching of the prepuce by erections. In spite of this, I would strongly urge that this little operation, when advisable, is recommended at this age on sanitary and moral grounds; all hypothetic arguments being avoided. . . . Whenever possible, it should be done as early as the child's condition permits.

A careful perusal of the views herein expressed must be convincing, to say the least, of the great value of circumcision as a sanitary measure. Detailed comment on the individual views seems altogether unnecessary. It may be pointed out, however, that there is a practical unanimity on the part of those who have kindly expressed their opinions as regards this question. The one dissenting voice is that of Dr. M. W. Ware, and with all the deference due to my one-time preceptor, I cannot but feel that his opposition to circumcision is based on other than scientific grounds. Even assuming for the moment that his Harvard friend is correct in his weird statement that circumcision was regarded as a substitute for the "sacrifice on the altar of God" (which is not true), I cannot see how that has any bearing on the present-day value of circumcision as a sanitary measure. To close our eyes to the utility of this little operation because it is a relic of ancient times brings to mind the similarly ancient custom of biting one's tongue to spite the nose. If there is any objection to circumcision, it should be based on valid, scientific grounds, and it is to be regretted that so capable an observer as Dr. Ware has not offered any objection more convincing than that "it is a fetish surviving from ancient times."

It must be apparent, however, that the vast preponderance of modern scientific opinion on the subject is strongly in favor of circumcision as a sanitary measure and as a prophylactic against infection with venereal disease. Whatever objections have been raised owing to the improper performance of the operation should not militate against circumcision *per se*, but against those persons who fail to do it properly.

III. AS A PROPHYLACTIC AGAINST VENEREAL WARTS, HERPES AND EPITHELIOMA

There can be no question that the development of venereal warts and herpes is favored by the presence of a foreskin and a chronic balanitis. The instances in which they are seen in a circumcised patient are rare indeed. They are usually found just behind the corona, in conjunction with a more or less irritated foreskin.

The late Jonathan Hutchinson stated as his belief that phimosis and balanitis lead to cancer of the penis. This view is likewise held by innumerable observers who have had the opportunity of studying the relationship between the chronic inflammatory condition existing in the presence of balanitis and the development of this form of cancer. All writers agree that penile cancer in the circumcised is exceedingly rare. I need but recall the remark of Dr. H. H. Morton, previously quoted, to the effect that all but one of the patients in whom he amputated the penis for cancer were blessed with long foreskins. Chetwood, in his latest work,[8] states that the percentage of cancer of the penis "in those of the Hebraic race is strikingly small." One need not stretch the imagination too far, to realize that the constant friction and irritation occasioned by the presence of a foreskin, particularly a tight and long one, may act as an exciting cause of cancer in men predisposed to this disease. Especially is this true of the ignorant and poorer classes, who are not overclean, and who, apparently, are not instructed in their youth by their parents or guardians as to the necessity for an occasional cleansing of the preputial cavity. Barney,[9] basing his observations on a study of one hundred unselected cases of penile epithelioma, concluded that phimosis is preeminently the most important of its exciting causes, occurring in over 85 per cent. of cases. It is worthy of note in this connection that there was not a single Hebrew among the hundred patients, a fact which an editorial writer[10] considers a "most convincing argument

6. Lydston, G. Frank: Sex Hygiene for the Male, Chicago, Riverton Press, 1912.
7. Corner, E. M.: Male Diseases in General Practice, London, Oxford University Press, 1910.
8. Chetwood, C. H.: The Practice of Urology, New York, William Wood & Co., 1913.
9. Barney: Ann. Surg., December, 1907.
10. Med. Rec., New York, Feb. 15, 1908.

in favor of circumcision in an adult whose prepuce cannot be easily and completely retracted." Surely if circumcision is indicated at all, the time to perform it seems to be before the child becomes an adult and runs the risk of cancer.

For the further information of those who regard circumcision as a relic of barbarism without any redeeming value, it is interesting to note that Bashford[11] says:

> Similar conclusions have been arrived at by a consideration of cancer of the penis, which is extremely frequent in some races, and very rare in others living side by side with them. The frequency of cancer of the penis is apparently associated with chronic irritation due to the accumulation of dirt and secretion under the prepuce, whereas it is practically unknown in Mohammedan races who practice circumcision.

IV. AS A PROPHYLACTIC AGAINST MASTURBATION

It is a well-known fact that the foreskin is a frequent factor in the causation of masturbation, not alone in children, but in adults as well. This has been amply proved by the fact that circumcision has become recognized as a most effective remedy in these cases. The glans in the uncircumcised is highly sensitive, and this, combined with the constant friction of the prepuce and the accumulation of the secretions, brings on a condition of irritation which is often relieved only by manipulation and scratching, with the result that masturbation becomes more or less of a habit.

A repetition of a paragraph from Lydston (already quoted) may be pardoned in this connection. He says:

> Circumcision promotes cleanliness, prevents disease, and by reducing oversensitiveness of the parts tends to relieve sexual irritability, thus correcting any tendency which may exist to improper manipulations of the genital organs and the consequent acquirement of evil sexual habits, such as masturbation.

Furthermore, it is generally accepted that irritation derived from a tight prepuce may be followed by nervous phenomena, among these being convulsions and outbreaks resembling epilepsy. It is therefore not at all improbable that in many infants who die in convulsions the real cause of death is a long or tight prepuce. In a case reported by A. H. Baker[12] of Elmira, N. Y., repeated attacks of epileptiform convulsions occurred in a boy aged 5. It was found that there was an adherent prepuce with marked adhesions. After the child was circumcised the convulsions ceased and have not since recurred.

A similar case is reported by Gowers,[13] the famous neurologist, as follows:

> A boy aged 13 had suffered from fits for fifteen months, which commenced with a sudden start of considerable violence, and immediately his legs became strongly flexed, and his trunk bent forward with the head between the knees. He had twelve or fourteen fits a day on various treatments. It was then found that he practiced masturbation; a blister on the prepuce reduced the fits from two to seven daily. He was then circumcised, and the attacks ceased at once, and did not recur.

Gowers also adds,[13] in discussing the treatment of epilepsy:

> Circumcision, if effectually performed, is usually successful, and should be adopted in all cases in which there is reason to associate the disease with masturbation.

We have the further testimony of Moll,[15] who confirms the general opinion that phimosis induces to masturbation. To quote:

> We have further to take steps to allay as far as possible all kinds of local irritation of the genital organs. Among these may be mentioned phimosis and skin eruptions of the genital region, which latter may lead to scratching, and so give rise to masturbation, even apart from the fact that the itching itself may favor the occurrence of voluptuous sensations.

With these authoritative observations in mind, we may safely conclude that circumcision is to be regarded as a powerful prophylactic against masturbation and other reflex neuroses that result from preputial irritation.

V. AS A PROPHYLACTIC AGAINST LOCAL COMPLICATIONS IN VENEREAL DISEASE

Surely it is not necessary to offer more than the mere statement of fact, to convince an unprejudiced mind that circumcision prevents local complications in the presence of venereal disease. The experience of any one who has treated venereal diseases in a large clinic which is patronized by uncircumcised men of the lower and poorer class is sufficient for the purpose. Balanitis, with its accumulation of natural and pathologic secretions within the cavity of the prepuce, is a complication of such common occurrence as to be expected in every uncircumcised patient. Worse than that, when the prepuce is somewhat longer and tighter than usual, chancres and chancroids may and often do remain long undiscovered, hidden in a mass of unspeakably foul and necrotic matter. Inflammation of the adjoining glands is the natural sequence of the retention and absorption of these unclean secretions. In this connection it is well to remember that there must be cases innumerable, in which syphilitic and chancroidal infection has been spread unwittingly in coitus, as the result of these venereal ulcers, hidden in the preputial cavity. Not infrequently, too, the retention and inflammation become so acute as to produce extensive ulceration and necrosis of the glans and the foreskin itself. Altogether, the picture is a striking and compelling argument in favor of the circumcision of all males, irrespective of whether the foreskin might in adult life be long or short, tight or loose.

VI. AS A PROPHYLACTIC AGAINST BALANITIS

It naturally follows, as Dr. Corbus has mentioned in his statement, quoted before, that in the absence of a foreskin, this form of preputial inflammation is impossible. This condition was first described by Bataille and Berdal,[16] and later confirmed by Scherber and Müller.[17] The etiologic factors are a tight foreskin, which excludes the air, joined with a symbiosis of an anaerobic vibrio and a spirochete. Corbus and Harris,[18] in an extensive study of this disease, remark that this condition may cause deep and wide-spread gangrene, and that "as a prophylactic measure the practice of circumcision should be encouraged; it is absolutely impossible for balanitis to exist in an individual who has been circumcised." To those who condemn circumcision, a brief experience in a clinic located in a neighborhood in which the uncircumcised live and come for treatment must be suffi-

11. Bashford: Third Scientific Report of the Imperial Cancer Commission, quoted by E. M. Corner (Footnote 7).
12. Baker, A. H.: Med. Era, January, 1910.
13. Gowers, W. R.: Epilepsy and Other Convulsive Diseases, Philadelphia, P. Blakiston, Son & Co.
15. Moll, Albert: The Sexual Life of the Child, New York, the Macmillan Company, 1912, p. 307.
16. Bataille and Berdal: La balano-posthite erosive circinée, Méd. mod., 1891, ii, 340.
17. Scherber and Müller: Arch. f. Dermat. u. Syph., 1905, lxxvii, 77.
18. Corbus, B. C., and Harris, F. G.: Erosive and Gangrenous Balanitis, THE JOURNAL A. M. A., May 8, 1909, p. 1474.

V. 6
1914

ciently convincing, if their olfactory nerves are normal, that the fourth venereal disease is in itself the best possible argument for universal circumcision.

VII. AS A PROPHYLACTIC AGAINST PHIMOSIS AND PARAPHIMOSIS

What has already been said in favor of circumcision must apply with equal force in reference to the occurrence of phimosis and paraphimosis. Here we have a purely mechanical condition to deal with—one which cannot exist in those who have been properly circumcised. Joly,‡ the French surgeon, estimates that fully 12 per cent. of all infants present a congenital phimosis at birth. It is conceded even by those who condemn ritual circumcision that in the presence of either of these conditions, circumcision is imperatively indicated; conversely, it is apparent that the only way to prevent their occurrence, with all the ills that go with them, is to circumcise all male children.

In elderly men, with the passing of the sexual function, the prepuce undergoes involution with the rest of the genital organs, and as a result, retraction becomes more and more difficult. Chronic phimosis is the outcome, bringing with it a retention of secretions, masturbation for the relief of the irritation, and occasionally the deposit of urinary salts in the preputial cavity and the formation of preputial calculi. In this connection, Corner[7] says:

> Sometimes the timely operation of circumcision does much to save a patient and his friends from remorse, misery and perhaps, shame. Much might be done for the comfort of the individual, and the happiness of mankind in general, if circumcision of the elderly were more frequently undertaken.

Zuckerkandl of Vienna reported thirty cases of preputial calculus, and Velpeau found a stone in the preputial cavity which weighed 130 gm.[5]

It is also interesting to note that the condition of bilharziosis is strongly associated in the literature with the presence of a prepuce. It is the opinion of some writers who have observed this disease that the bilharzia is not taken into the stomach, but that it enters the body through the urethra while the patient is bathing. This is the opinion of J. F. Allen,[19] who has practiced for years in Natal, Africa, and who, in a lengthy discussion of this disease, advises circumcision as the best method of preventing the infection.

Another point of interest worth remembering in connection with the subject of phimosis is that this condition often leads to the maldevelopment, or rather to the lack of proper development, of the sexual parts. It is not unusual to find, in a man otherwise large and well-built, a distinctly infantile development of the external organs. In such cases a tight or long foreskin will almost always be found, and if in these cases circumcision is done, the organ will often take on a startlingly sudden growth. In my own experience I have encountered at least a dozen instances in which this lack of development has been corrected by the performance of circumcision. Lydston,[6] in commenting on this feature of phimosis, says:

> Early circumcision insures proper development of the parts. It is a matter of common observation among physicians that the Jew is, on the average, less frequently sexually maldeveloped than the Gentile. The admirable custom of circumcision may have had much to do with the extraordinary virility and endurance of the Jews.

‡ Joly: Histoire de la Circoncision, Paris, 1895.
19. Allen, J. F.: Lancet, London, May 8, 1909.

CONCLUSIONS

In closing this review of the subject, I venture the opinion that there is much to be said in favor of circumcision and very little, or practically nothing, against it. The most that can be said against the operation as a routine measure is that it is sometimes done improperly, with the result that infections of a serious nature follow. This, however, is a matter that should be considered solely in connection with the performance of the operation, and not with the operation itself. If there are men performing circumcision who are tuberculous or syphilitic, and who, because of their ignorance, spread infection to the infants on whom they operate, they should be taken in hand and weeded out by such means as may seem most practicable and feasible. But to condemn circumcision itself because of that fact seems to me to be worse than childish.

Circumcision must be considered one of the most beneficent measures ever devised for sanitary purposes in human beings, and it is to be wondered at that there should exist, at this late day, physicians who stand ready to condemn the practice.

It is indeed a curious fact that many, if not most, of those who oppose ritual circumcision are themselves Jews, and I can recall a conversation with an eminent physician, the son of a famous American rabbi, who boasted that he would not permit his sons to be circumcised. It seems passing strange that men should go so far in their worship of the unattainable as to forget that "all that glitters is not gold," even though it be such a worthy appendage as a prepuce. They also seem to forget that the Tenth Commandment specifically forbids us to covet that which our neighbor possesses, and in this general prohibition, we may surely include the prepuce, which the famous master Ricord designated as a "useless bit of flesh."[20]

The pediatricians who see the evils of faulty circumcision or infections resulting therefrom should remember that they see only the exceptional cases in which the normal and usual result has not been attained. They should also remember that circumcision attains its greatest usefulness in adult life, and particularly when the individual is brought into contact with venereal infections. To those who are called on to treat the diseases acquired by men in maturity, the picture is entirely different from that seen by the pediatrist. The advantages which circumcision brings are best seen, not in childhood, but when the child becomes a man, when the pediatrist has lost track of him.

Quoting Lydston again:

> It is strange that with the experience and example of this great race (Jewish) before him, the Gentile has not generally adopted as a hygienic custom the operation of circumcision. *It is the opinion of many eminent physicians that parents who do not have an early circumcision performed on their boys are almost criminally negligent. In this opinion I fully concur.*[21]

With this emphatic statement of belief and many others from non-Jewish sources and confirmed by the preponderance of expert opinion, I do not hesitate to conclude, notwithstanding the teachings of Maas and his supporters, that it is the moral duty of every physician to encourage circumcision in the young—and it is immaterial whether it is done as a religious rite or as a purely sanitary measure.

113 E. Nineteenth Street.

20. Remondino: History of Circumcision, p. 206.
21. Italics in original.

HYSTERIC BLINDNESS OF BOTH EYES IN ELDERLY MEN

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It is commonly asserted that hysteria is chiefly observed in young persons and in females. As for the element of sex, the impression left on me by my own experience is that the preponderance of females among the sufferers from hysteria in general is not sufficient to flatter greatly the males. Anesthesia, paralysis, contracture, aphonia, double personality, etc., have been observed by me often enough as manifestations of hysteria in men to cause me to doubt a much greater susceptibility to the disease in women. The two cases of hysteric blindness, presently to be recorded, helped to confirm the doubt. I have had only one case of (unilateral) hysteric blindness in a woman to oppose to these. This numerical relation is not in accord with the aggregate experience deduced in 1902 from the literature of the subject by Kron.[1] He found that among 23 cases of unilateral hysteric blindness there were 7 males to 16 females, and in 26 cases of bilateral blindness the proportion was only 4 males to 22 females. Kron, however, overlooked the two cases reported by Barkan[2] of San Francisco, in 1894; had he included them, there would have been 6 instead of 4 males to 22 females. If these figures are to be trusted to illustrate the relative liability of men and women to hysteric blindness of both eyes, they may also be used to show that one-third of the men so afflicted are to be found in San Francisco — a preposterous conclusion of the kind easily drawn from small numbers.

In respect to age, the two cases herein to be dealt with seem to be even more anomalous, for one of the patients had reached an age equal to that of the oldest patient with hysteric blindness — unilateral in that case — of whom I have found mention, and the age of the other exceeded his by six years. Their ages, being uncommon in the circumstances, make their cases interesting; and, coinciding as they do with that period of life in which the effect of time on the blood-vessels of the nervous organs may be revealed by grave and not altogether dissimilar impairment of functions, they make the cases important.

CASE 1.—Captain D., an Irishman, aged 60, was led into my consulting-room, apparently blind, Dec. 16, 1905. Until shortly before he had been master of a coasting steamer. He related that he had first noticed about two or three months before this visit that his vision was failing. He could see certain red and green lights at first 6 miles off, then only 5, then 4, then 3. It was the green lights especially that had given him trouble. He had suffered no emotional strain at all until he thought that his sight was failing. Then he worried a great deal, became almost sleepless, and had severe headaches. It was only when he was looking at the lights, however, that he had been conscious of any defect in his vision until, on awakening one morning, two weeks before he was brought to me, he found that he was "totally blind." He had not had lues. Alcohol had been taken moderately. His mother had been a chronic lunatic.

The patient was a man of robust body. Whether led, or feeling his way by himself, his behavior was that of a blind person. Yet he admitted that he was not in total darkness; rather there was a dense fog around him. He could look straight into the bright sun without inconvenience. When the rays of a strong light were focused on the pupils with a lens or mirror, he had a perception of light. Flashes of light were also perceived when a galvanic current was closed or interrupted while the anode was applied to the back of the neck and the cathode to one or the other temple. The pupils reacted promptly to light; their consensual reaction was also distinct. The backgrounds of the eyes were normal. The corneal reflex of the right eye was equal to that of the left, but there was a hypesthesia extending over the right half of the head and trunk and the right extremities. A tuning-fork on the vertex or on the forehead was heard only in the left ear. The tests of smell and taste gave varying results. The deep reflexes and the plantar reflexes were perfectly normal on both sides. The abdominal reflex, which was faint on the left, was absent on the right.

This hemihypesthesia, of which the patient had been unaware until the examination revealed it, was regarded as hysteric, and the lack of sight was considered to bear the same character; wherefore positive assurance was given that vision would be regained and varied suggestion was used to compass that end. In a few days he declared that the mist had become less dense, but he saw things still only as shadows; the five fingers of the observer's hand, for instance, being held up before him appeared as five objects the nature of which he could not discern. Later, red and green could be distinguished as darker and lighter "shadows," the red being the darker "black," and a pronounced green was distinguished as a deeper shade of the same color as a pale green tint which had been submitted to him; but on Jan. 4, 1906, the day on which I last saw him "blind," he still walked like an ordinary sightless person, and, having once come without a guide, he related, on his arrival, that he had fallen into an opening in the sidewalk.

His visits ceased abruptly. After an interval a message was brought that he was an inmate of the U. S. Marine Hospital and could not come because he had no one to lead him. It was therefore probable that not much progress had been made toward a useful degree of vision, if indeed he had not lost what little he had regained.

The next intelligence concerning him was derived from a morning newspaper of Feb. 19, 1906, which, straining its vocabulary of the weird and wondrous, related that a man who had been detained for a week at the Receiving Hospital in the city of Oakland, a mystery to himself as well as to the physicians there, because he had no knowledge of his personal identity, being ignorant even of his own name, had, the day before, suddenly regained this knowledge and now stood revealed as Captain D., but Captain D. no longer blind. In the afternoon this was verified by the patient himself who came in, loudly proclaiming that he could "see perfectly." He was as elated and grateful as one might be who had recovered his vision after a blindness of organic origin, and in his enthusiasm spontaneously offered to submit to any tests we might desire for the study of his case. And on the following day he did permit Dr. W. E. Hopkins to determine, preliminarily, that without correction his vision was from 20/60 to 20/70, with plus 0.5 it was 20/30 in the right eye and with plus 1 it was 20/30 in the left, and that the visual fields were contracted about 10 degrees for blue and green and 20 for red. Then he disappeared again from my view—this time forever. It was soon afterward explained by a friend of his that the exacting duties of some employment which the captain had obtained left him no leisure to fulfil his promise. Later we learned from the same source that he had relapsed twice into blindness, which recurrences finally depressed him so much that on March 1, 1909, he committed suicide.

The calling of a mariner and the age of 60 years are circumstances that do not comport with the current notions of hysteria. In combination with the patient's severe headaches they may have diverted suspicion of the true nature of the man's blindness from the mind of one oculist, who had previously found a tubular field of vision and had based on it an unfavorable prognosis, and may have deluded another into assuming a "tumor

1. Kron: Hysterische Blindheit, Neurol. Centralbl., 1902, p. 584.
2. Barkan, A.: Festschrift des Vereins deutscher Aerzte zu San Francisco, 1894, p. 10.

V. 6
1914

behind the optic chiasm." The hardy temperament which we are wont to ascribe to those who follow the sea must have been vitiated in this instance by a hereditary influence derived from the mother, who became incurably insane. Toward dissociating the conception of susceptibility to hysteria from the imputation of effeminacy or pusillanimity it may be well to mention that one of Barkan's patients, a mining engineer, had proved his courage in the pursuit of lions and in combat with savages in the wilds of Africa.

The headaches from which the patient suffered before losing his sight were calculated to excite an apprehension of serious cerebral mischief of an organic nature, but writers[3] on the subject have pointed out that blindness has occurred especially in those cases of hysteria in which headaches and encephalic symptoms predominated.

CASE 2.—An English clergyman, aged 54, having been until then in good health, was stricken suddenly, while in his pulpit, on Sunday, Oct. 24, 1909. "He became completely blind at once," his physician wrote, "but did not fall or lose consciousness." (At the consultation subsequently it was stated more precisely that he became blind, regained his sight, and then lost it again.) "He was able to continue the service," the history proceeds, "and was then led out. Left arm and leg numb and weak, but not helpless. At the end of twenty-four hours hemiplegia more nearly complete, but he has always been able to move the limbs of left side a little. Occasional clonic convulsions in left leg the first day. Can feel touch, but not pain. Tongue in median line, speech and swallowing intact. . . . Pupils dilated equally, and stationary. Sight absent. Extra-ocular muscles and brow and face muscles not affected. No pain except in eyes when exposed to light."

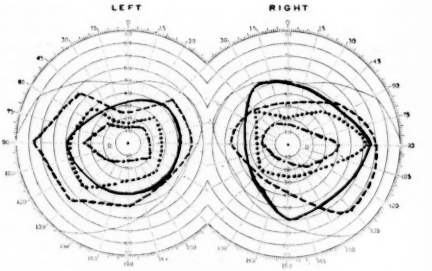
Ten days later it was reported: "Patient has been confined to a dark room on account of photophobia." The pupils were now stated to react to light; the patient could perceive a difference when light entered the room and light no longer gave him pain. There had also been an improvement in the motor power of the left extremities, but the patient was very easily fatigued; the effort of talking or eating exhausted him. Nothing had been found in the urine or in the heart which could have caused the visual or cerebral disorder.

On November 6, that is, thirteen days after the onset of the trouble, I examined the patient at his home, several hours' journey from San Francisco, in consultation with the attending physician. He had been progressing steadily until, as the doctor informed me, "he distinguished light and shade, although he could not see outlines." He could now see enough to perceive that I wore spectacles. Vision with the right eye was less reduced than with the left, the higher degree of amblyopia on the left being probably connected with the anesthesia which was found throughout the whole of that side, on which hearing and smell were also duller than on the right. The patient kept the lids screwed up, as with a blepharospasm from photophobia, but we made an ophthalmoscopic examination of him without much difficulty and found no changes in the fundi. The reactions of the pupils were unimpaired. The movements of the face and tongue were normal, but power in the left upper and lower extremities was diminished; the lower limb was more affected than the upper. The patient could walk, but dragged the left foot and did not circumduct it in the manner commonly observed in organic hemiplegia. There was a perfectly normal plantar reflex on the left, although, probably as a result of the hemianesthesia, it was not quite so lively as the right one; the abdominal reflexes, the knee-jerks and the reflexes in the upper extremities were equal on the two sides. There was no astereognosis.

The patient was very hopeful in regard to the recovery of his sight and of the power of motion, and the assurances given him in order to fortify his confidence seemed to be rather superfluous.

By November 20 the doctor reported that "the patient sees very well now, but cannot read yet. Print is blurred to his eyes. He walks about with a cane with considerable favor to the weak leg." On Feb. 4, 1910, the account of him read: "He walks perfectly well and strong on both legs. He cast his cane aside several weeks ago. He is apparently in normal condition now with the exception of one eye. It gets tired quickly and does not see as clearly as the other." Later reports announced that "he is real active on his legs and his sight is good," but his memory was poor, mental effort confused and exhausted him, so that, being unable to produce new sermons or to attend to other clerical duties without suffering distress, he had to be retired.

As soon as I was informed that the patient was able to leave his home I began my endeavors to induce him to come to San Francisco, in order to examine him more thoroughly than circumstances had previously permitted; not succeeding in this, I pursued him with my importunities across the continent, and at last, about three years and a half after that seizure in the pulpit, through the kindness of Dr. B. F. Hodsdon of Miami, Fla., I obtained two sets of charts of his visual fields, one of which is here reproduced. Dr. Hodsdon took the fields on three different days and found that they varied.[4] The perimeter chart which is here supplied is the result of the examination of March 26, 1913. It will be



Case 2.—Fields for white and colors taken March 26, 1913. Dark continuous line indicates field for white; dash line outlines blue, dotted line red, line of dots and dashes green.

observed that the field for white of both eyes is contracted, more of the left than of the right. The salient abnormality is, however, the extension of the field for blue beyond that for white, especially in the left eye, in which the field for red also in some meridians extends beyond that for white. The field for blue may perhaps be regarded as a little larger than normal. Red and green give irregularly contracted fields. There is no reversal of the color fields.

The perimeter charts dated April 25, 1913, also show the periphery of the fields for blue extending beyond the outlines of the white fields. This time the peculiarity is observed in the right eye as well as in the left: in both the temporal part of the blue extends from 25 to 30 degrees beyond the white fields.

A long letter written about this time by the patient contains no evidence of intellectual feebleness except his own statement that intense thinking causes "everything to become dense and cloudy." When he hurries or exerts himself he becomes conscious of a weakness in the left lower extremity; but whatever impression of any degree of disability might be derived from this description of his condition is pretty well effaced by his concluding denomination of himself as "a very well-satisfied individual."

3. Kron: See Footnote 1. Dieulafoy: La cécité hystérique, Sem. méd., 1905, No. 50, p. 591, lays special stress on headache as a forerunner of hysteric blindness.

4. No information was furnished as to the size of the test object used in the perimetric examinations, nor have I any data as to the patient's present visual acuity.

In the first case, after a period of gradual diminution of vision, or, at least, of increasing apprehension of loss of vision, sight was suddenly lost, and, after an interval, as suddenly regained under circumstances which must dispel all doubts as to the nature of the blindness. In the second case, contrariwise, there was no premonition: like the disasters which may result from organic cerebral disease and are not uncommon at his time of life, paralysis and blindness befell this patient in the midst of his professional activity, and again, like the effects of organic disease, and unlike the dramatic issue in the first case, they receded only by degrees.

An emotional etiology could not be clearly elicited. In a very small town the minister "ran his godly race." He had a large family and a very meager stipend, but it could not be ascertained that his placidity was disturbed by anything more than the cares of his parishioners, and no unusual excitement had preceded the calamity which overtook him in his pulpit. The profession that he is "a very well-satisfied individual," quoted above, may be taken into account in determining his kind of temperament. His physician believed that the imputation of his being subject to such a disorder as hysteria would be extremely offensive to him.

The hemihypesthesia in the clergyman was of the same character as that of the mariner, and did not differ considerably from it in intensity. It will probably not be asserted that this "sensory" or "mixed" hypesthesia (so called because the special senses were more or less involved), which is so common in hysteria, was caused by an organic lesion in the first case; nor is there any necessity for assuming any such lesion in the second, despite the association of the affection of sensibility with a disturbance of motor power. This motor disturbance had no indisputable characteristic of organic origin, such as a Babinski sign; still, with the aid of some authors,[5] the hemiparesis, with greater involvement of the leg than of the arm, and the mixed hemihypesthesia might be referred to a lesion affecting the posterior part of the internal capsule; but such a lesion could not be conceived to cause the blindness. A unilateral affection would have caused a hemianopsia (or, according to the teachings of a former time, a crossed amblyopia with concentric limitation of the visual field) associated with the hemianesthesia; to make the patient "completely blind at once," a simultaneous injury to optic fibers or centers would have been required in the other hemisphere. The blindness resulting from bilateral lesions would consist in the addition of a right and a left homonymous hemianopsia; like the blindness of the two patients now under discussion it would be compatible with normal pupillary reactions, clear media and normal disks, and after having been complete for a longer or shorter period, it might be followed by a return of vision limited, however, to a field closely contracted around the fixing-point. I can say from my own experience in a case of bilateral softening of the occipital lobes in a woman of 65, and in two cases of blindness following a fall on the back of the head in young persons, by which no doubt the occipital lobes suffered injury, that from such lesions there may result a state of blindness which may be distinguished from hysteric amaurosis only by considering all the clinical features.

There are, however, in my second case positive traits in the picture which determine its interpretation as hysteric. These are, first, the photophobia and the appearance of blepharospasm. Dieulafoy writes, "A considerable number of patients affected with hysteric blindness keep their eyes obstinately closed like persons suffering from keratoconjunctivitis, who close their lids because they fear the light." He cites a case of Saint-Ange's, in which the patient had a spasm of the orbicularis, which was ascribed to a certain degree of photophobia, although the blindness was absolute. Then there are the visual fields which, although not charted until three years and a half after the attack of paralysis and blindness, still exhibit an extension of the field for blue far beyond that for white—a hyperchromatopsia which, experienced oculists inform me, is hysteric, an opinion for which there is support in a chapter contributed by De Schweinitz to Posey and Spiller's work on "The Eye and Nervous System."

Still, *falsum in uno* need not imply *falsum in omnibus;* for some disturbance may have occurred in the cerebral circulation which caused the left hemiparesis and at the same time provoked the mental state of which the blindness was a manifestation. The weight of the evidence, however, inclines to the conclusion that the whole constitutes a remarkable example of the power of hysteria to mimic cerebral disease.

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5. See, for instance, Taylor James: In Allbutt and Rolleston's System of Medicine, viii, 297, the chapter on Occlusion of Cerebral Vessels. For the opinion that "sensory" or "mixed" hemianesthesia always denotes hysteria see Oppenheim: Lehrbuch der Nervenkrankheiten. Ed. 6, ii, 928.

EXTRATHORACIC AND INTRATHORACIC ESOPHAGOPLASTY IN CONNECTION WITH RESECTION OF THE THORACIC PORTION OF THE ESOPHAGUS FOR CARCINOMA *

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A year ago surgeons were still trying to demonstrate the possibility of successful resection of the esophagus for carcinoma. Gastrostomy for feeding and excision of the tumor with the working out of a safe method of inverting and closing the oral esophageal stump, which was left *in situ* within the thorax, appeared to be all they expected to achieve. The construction of a new tube for the act of swallowing—esophagoplasty—was a question that was given less consideration.

Since then the surgery of the esophagus has made such rapid strides forward that to-day the operator is obliged to include the question of the best way of forming a new esophagus when planning his operative work for the removal of a malignant esophageal stricture.

How did this rapid change come about? It seems that two factors are responsible for it:

1. The experimental designing of a new method of gastrostomy, the Jianu operation,[1] which incidentally represents the first step of inferior (or lower) esophagoplasty, and its introduction into human surgery.[2] By this operation a new tube is made by the dissecting off of a portion of the major curvature of the stomach, its

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* Because of lack of space this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

1. Jianu: Gastrostomie und Oesophagoplastik, Deutsch. Ztschr. f. Chir., 1912, cxviii, 383.

2 Roepke, W.: Centraibl. f. Chir., December, 1912.

transposition under the skin of the thorax—extrathoracically—from below upward.

2. The performance of two resections of the esophagus for carcinoma in man, in each of which the oral stump of the esophagus is successfully transposed under the skin of the thorax from above downward, superior (or upper) esophagoplasty.[3]

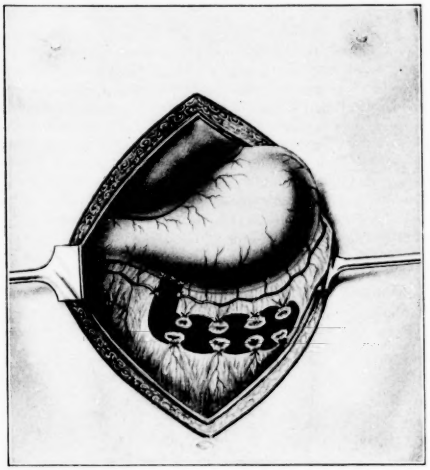

Fig. 3.—Jianu's gastrostomy and inferior esophagoplasty. Median incision; double ligation and division of omentum majus up to the point at which left inferior epiploic artery turns onto the stomach. Double ligation and division of right inferior epiploic artery; exposure of major curvature of stomach.

In order to avoid repetition, it seems best first to review briefly the operations devised for esophagoplasty prior to the year 1912.

BRIEF REVIEW OF OPERATIONS FORMERLY DEVISED

1. Esophagoplasty[4] by Means of Skin-Plasty (Bircher).[5]

Bircher showed as early as 1894 that a well-functionating, new tube for swallowing can be made from the neck down to the stomach by plastic work on the skin of the anterior aspect of the thorax.

2. Inferior Esophagoplasty with the Help of a Totally Excluded Coil of Jejunum (Wullstein,[7] Roux[8]).

The operation is done in three (or four) stages. A coil of the upper jejunum is totally excluded, remaining, of course, attached to its mesentery, transposed under the skin of the thorax and then with its lower aperture connected with the stomach (Fig. 1). Herzen, Lexer and Frangenheim have proved the feasibility of the method in cases of intractable cicatricial stricture of the esophagus. Their patients recovered. Gangrene of the transposed coil easily spoils the result.

3. Ach, Alwin: Beitr. z. Oesoph.-Chir., 1913 (published as monograph by J. F. Lehmann, Munich). Torek, Franz: The First Successful Resection of the Thoracic Portion of the Esophagus for Carcinoma, THE JOURNAL A. M. A., May 17, 1913, p. 1533.

4. We must differentiate between "total" and "partial" esophagoplasty according to the length of the tube to be replaced. See P. Frangenheim, in Ergebnisse der Chirurgie und Orthopädie, 1913, v, 406.

5. Bircher, E.: Centralbl. f. Chir., 1907, No. 51.

7. Wullstein, K. A.: Deutsch. med. Wchnschr., 1904, No. 20; Centralbl. f. Chir., 1908, No. 8.

8. Roux, C.: Semaine méd., 1902, iv.

3. Inferior Esophagoplasty with the Help of the Totally Excluded Transverse Colon (Kelling,[9] Vulliet[10]).

The transverse colon, totally excluded, also represents useful material for the formation of a new extrathoracic subcutaneously placed esophagus (Fig. 2). As stated before, however, this kind of plastic work, ingenious as it is and important as it may prove to be, after all, for the surgery of the esophagus in the future, requires a series of operations, the first of which always has to be a gastrostomy according to one of the older well-known methods.

Jianu's gastrostomy promises to simplify this chapter of operative surgery, inasmuch as it provides for the formation of the lower portion of a new esophagus—inferior esophagoplasty—at the same time.

OPERATIONS RECENTLY DEVISED

4. Inferior Esophagoplasty with the Help of a Dissected Portion of the Major Curvature of the Stomach (Jianu).

Technic of Jianu's Operation.—Jianu makes use of the major curvature of the stomach for the creation of a rather long tube, one end of which remains in connection with the gastric fundus, while the other free end can be drawn up. Before Jianu, others had tried to solve the task in a similar manner, Depage[11] by making use of the lesser curvature, and Hirsch[12] of the anterior wall of the stomach. Jianu's procedure means a decided step forward in comparison with the other two. Briefly described, it is as follows: median abdominal incision above the umbilicus; pulling forward of stomach; double ligation and

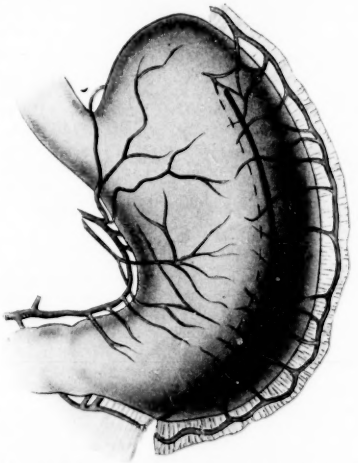

Fig. 4.—A mattress suture (dotted line) divides the lower one-third of the stomach with its major curvature from upper two-thirds; scissors then cut the stomach along the heavy line.

division of major omentum from a place about 2 inches from the pylorus up to the region in which the left inferior epiploic artery turns onto the stomach. Liga-

9. Kelling, G. E.: Centralbl. f. Chir., 1913.

10. Vulliet: Semaine méd., 1911, No. 45.

11. Depage: Tenth French Surg. Cong., 1903.

12. Hirsch: Centralbl. f. Chir., 1911, No. 48.

ture of right inferior epiploic artery next to the first omental stump, formed by the ligation, completely baring the stomach wall (Fig. 3). A mattress suture is run from here through the entire thickness of the stomach about 1½ inches distant from and parallel with the greater curvature (Fig. 4, dotted line), the stomach having been lifted up by the assistant in order to have the contents run toward the lesser curvature. By placing a clamp (better still, two equally curved clamps), corresponding to the line of the major curvature, the asepsis of this part of the operation can be materially improved and the work simplified[13] (Fig. 5). Division of the

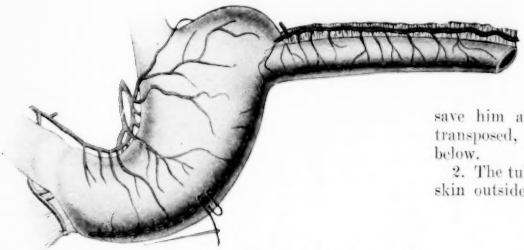

Fig. 6.—The major curvature flap formed into a tube—Jianu tube—by means of a continuous Connell suture; a second running suture (preferably Cushing's) secures the first row.

stomach with scissors right below the suture line (Fig. 4, heavy line); major curvature turned up and temporarily wrapped in a piece of sterile gauze; Connell's suture from end of mattress suture to end of stomach flap forms the latter into a tube: "Jianu's tube" (Figs. 6 and 7). A second continuous suture inverts the first along its entire length; temporary inversion of end of tube by two or three sutures, their ends being left long (Fig. 8). Stomach turned so that base of Jianu tube corresponds to upper angle of abdominal wound, where it is secured by a few stitches. Closure of lower half of abdominal wound. Jianu's tube placed on chest to the left of sternum, to measure its length; horizontal incision at level of upper end of tube, skin of thorax thoroughly undermined and new tube pulled up with long curved forceps which catches the end of the inverting sutures (Fig. 9). The latter removed, and mucosa—*not* the entire thickness of tube—lined to skin of transverse incision; a strip of gauze in either corner of wound for brief drainage (Fig. 10); temporary packing of the orifice of the tube with gauze; closure of upper half of abdominal incision; dressing.

A new tube of ample size, from 18 to 25 cm. long, with good blood-supply and surrounded completely by peritoneum, has thus been formed, affording splendid material for the making of a new canal through which the patient will be enabled to pass his food down to the stomach. Its base remains in connection with the gastric fundus. The placing of its free end decides the location of the new esophagus and additional operative procedures. If transposed *outside* under the skin of the thorax, the first stage of *extrathoracic* esophagoplasty has been accomplished. If pulled up into the pleural cavity, through a hole of the diaphragm as proposed by me[14] it can be used to replace the lower portion of the esophagus that had been resected for carcinoma: *intrathoracic* esophagoplasty.

So far I have carried out Jianu's operation in three patients. In the first case needle and thread were used throughout. In Cases 2 and 3 I tried Hültl's wire-stitching instrument. All three patients made a good recovery (Figs. 11-13). The new tube was in each case placed extrathoracically.[15]

OBSERVATIONS AND REMARKS

1. In view of the presence of the vasa brevia (the branches of the splenic artery) the mattress suture and incision can well be run 1½ or 2 inches further up toward the fundus of the stomach, past the onward turn of the left inferior epiploic artery, a procedure which lengthens the tube considerably. Of course, the longer the tube, the better for the patient; a difference of ½ inch may save him another operation, if the oral stump, also transposed, meets the end of the tube pulled up from below.

2. The tube, when pulled up through the tunnel of the skin outside the thorax, should be put on the stretch.

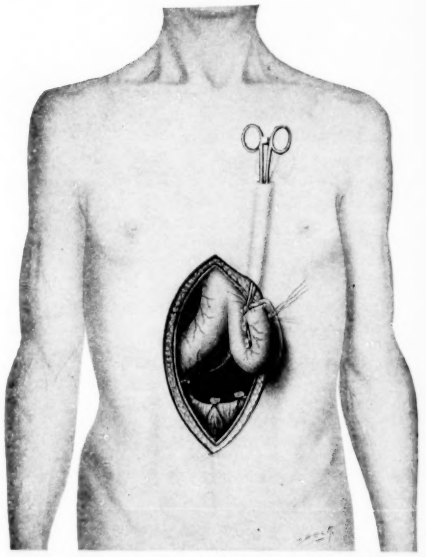

Fig. 9.—Stomach turned so that base of tube at fundus is flush with upper angle of abdominal incision; short transverse incision over third left costal cartilage, or above the same, according to length of tube; long curved dressing forceps there introduced under skin meets left forefinger of surgeon pushed upward from upper angle of abdominal wound; a wide subcutaneous wound is made. Forceps passed under bridge catches the sutures of inverted upper end of tube, which have been left long (in illustration the subcutaneous canal is shown very narrow by mistake; the forceps should catch the ends of all three sutures instead of only two).

Its ample blood-supply will prevent gangrene. Its upper end can thus usually be brought up to the level of the third and often that of the second rib.

13. If the major curvature is pulled into a straight line by an assistant, a straight clamp will probably do just as well.

14. Meyer, Willy: Centralbl. f. Chir., Feb. 22, 1913, No. 8.

15. Meyer, Willy: Ann. Surg., September, 1913.

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3. There is no sphincteric action at the base of the tube; hence it often leaks in spite of its length, if not blocked with gauze at the upper end (Fig. 12) or compressed by a truss-like apparatus. This may become a source of great annoyance to the patients and forbids this operation in case the surgeon intends the formation of a gastric fistula only. Here the old, well-tested and satisfactory methods of gastrostomy (Witzel, Kader, Ssabanejew-Frank, Senn) should be resorted to. This leakage of gastric contents may also spoil the result of additional plastic work that may become necessary. The next pressing task to be solved therefore is to improve the functional result of Jianu's tube. It is possible that twisting the tube from 60 to 90 degrees or more (according to Gersuny's method for resection of the rectum) may overcome the leakage, perhaps also a slight modification with reference to the opening communicating with the fundus of the stomach (possibly *the smaller* the better), or when suturing the upper half of the abdominal wound, for instance, lifting the stomach up by one or two sutures only, so that a kind of kink occurs at the

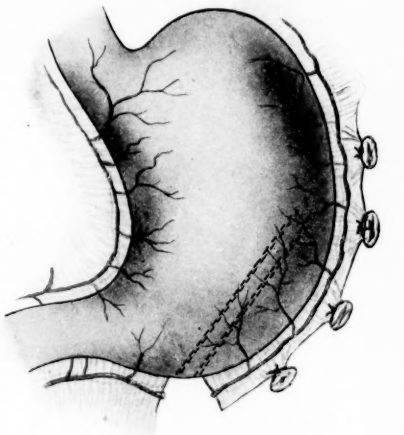
Fig. 13.—Third patient with same operation, also done under venous anesthesia and with Hültl's instrument (March 27, 1913). Base of tube at gastric fundus lifted up and secured to parietal peritoneum by six retention sutures; rapid recovery. Opening corresponds also to cartilage of third rib. Tube forms a distinct serpentine under skin; it might well have been put more on the stretch and would then have easily reached the second cartilage. During after-treatment an outflow of gastric contents is observed off and on, which suggests normal peristaltic motion in the tube in the direction from cardia to pylorus, very likely due to the branch of the left pneumogastric nerve which runs within the wall of the tube. Plugging the upper opening with gauze and compressing the tube against the ribs by means of a truss-like apparatus with water-pad controls the outflow satisfactorily.

place where the tube enters the abdomen, or by constricting the stomach at this place in some manner. A correct explanation of this leakage at the opening of Jianu's tube probably is that the normal peristaltic movements of the stomach persist in the dissected portion on account of the presence of a branch of the left pneumogastric nerve within the wall of the new tube. Further observations will have to decide this point.

4. Reduction of the size of the stomach to two-thirds of its width does not interfere any more with the gastric function, than does resection of the stomach in the transverse direction; the patients thoroughly enjoy their meals.

5. Subcutaneous transposition of the new tube is preferable to submuscular.

6. The patients chew their food, thus enjoying its taste; by using the physiologic action of the saliva they stimulate gastric secretion; then they deposit it in some kind of warm fluid, broth, milk or water and wash the food down into the stomach through a funnel and tube. The latter is introduced only at times of meals; it is not permanently worn. Intelligent patients need only turn the head forward and downward and blow the chewed food, with the help of a special, cup-like mouth-piece, through the Jianu tube into the stomach (Trendelenburg).



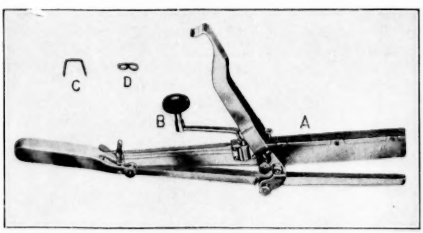


Fig. 14.—Lower illustration shows Hültl's wire-stitching instrument. *A* represents broad, square crushing clamp which harbors the four rows of staples (*C*). *B* shows crank; by turning same five times to the right after the clamp has been closed the staples are driven entirely through the tissues (wall of stomach or intestines), and either side bent inward (*D*), having met the resistance of the other branch of the clamp beneath. The bent staples are gradually pushed off in the course of healing and discharged through the rectum; they never do any harm. The upper illustration shows the double row of through-and-through wire staple sutures placed; the crushed center portion between the two inner rows is not shown.

7. On basis of operations on dogs, we have made use of Hültl's wire stitching instruments to great advantage in the formation of the Jianu tube in the last two patients operated on. Hültl's instrument (Fig. 14 *a*) combines a firm compression of the tissues, to be divided, with rapid, easy and safe placing of a double row of wire staples between which division is made (Figs. 14 to 17). The operation on the stomach is therefore

rendered absolutely dry and, of course, more aseptic. The time of operation is also shortened, a point which in addition to the first may be of importance in weak patients.

5. Inferior Esophagoplasty by Means of the Stomach and First Horizontal Portion of the Duodenum (von Fink).—Not infrequently a cancer of the cardia does not grow upward involving the lowest portion of the esophagus, but advances on to the cardiac portion of the stomach in the shape of a cap. Here the base of Jianu's tube would lie in an area possibly already involved in the malignant disease. In keeping away from the fundus at an adequate distance, the tube would be of no use on account of its shortness. Here one of the old methods of gastrostomy should be done, or, if extrathoracic esophagoplasty were desired, von Fink's operation would be indicated.

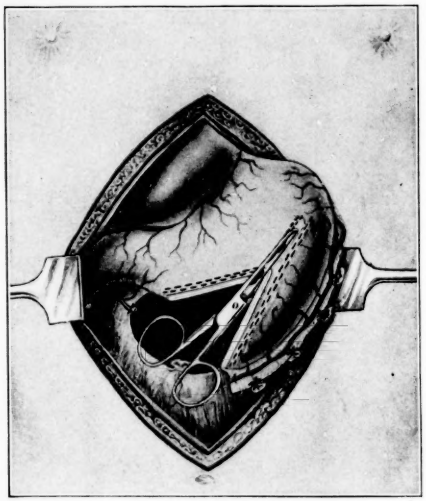


Fig. 17.—A second double row of staples is placed at an obtuse angle with Hiltl's second (smaller) instrument beyond the turr of the left inferior epiploic artery; scissors traverse the dry, crushed center portion between the inner rows.

6. Inferior Esophagoplasty by Means of the Stomach and Distal End of the Resected Esophagus.—Ach[17] proposes to make use of the stomach plus healthy distal stump of the esophagus after resection in its middle. Rehn[18] and Roepke[19] have worked in a similar direction. The procedure, if feasible, will be ideal on account of the presence of the normal cardia. The operation, however, means loosening the latter from its diaphragmatic attachment, and the necessity of providing against hernia through this hole. It also is to be seen how division of both pneumogastric nerves will affect the physiologic action of the cardia. Further, gastrostomy or inferior esophagoplasty must be done as the final step of the operation at the same sitting — a decided disadvantage.

The performance of gastrostomy after Jianu, as well as after von Fink and Ach, has no *raison d'être* in cases of cancer of the esophagus, unless the surgeon also desires to transpose the oral stump of the esophagus after resection, a procedure worked out by von Mikulicz and Kelling[20] years ago. The experience gained from two patients treated with this transposition of the oral stump of the esophagus after resection has shown, as mentioned before, that it can be done successfully and without the appearance of necrosis. This fact, in conjunction with the lower half of extrathoracic esophagoplasty, accomplished with the help of Jianu's gastrostomy (or von Fink's and Ach's procedure), has rapidly pushed on the evolution of this chapter of esophageal surgery. We have learned that extrathoracic transposition of the oral stump is the simpler and safer procedure, and it has therefore to be considered the operation of choice.

Further observations in man will show how long the oral stump may be without risk of partial necrosis. The latter must be avoided at all hazards, as it spoils the prognosis of subsequent plastic work which may become necessary, or even renders it impossible altogether. If it is of sufficient length to meet the opening of Jianu's tube, end-to-end suture, as mentioned, will finish the extrathoracic esophagoplasty in the happiest way (Fig. 21). If too short, a subsequent skin-plasty after Bircher[5] must bridge the defect (Fig. 22). Or, if further operating was not desired, or was contra-indicated, then a rubber tube, connecting both openings (Gluck,[22] Perthes)

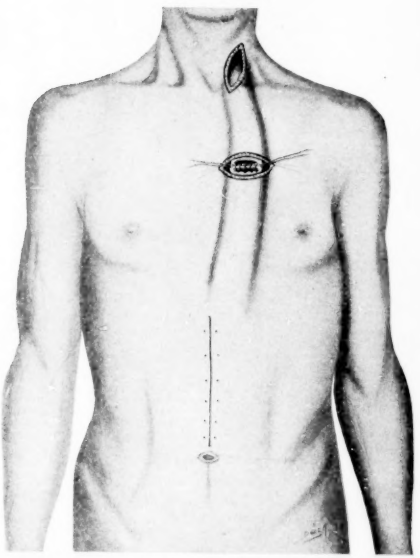


Fig. 21.—Last step of the two-stage operation just described.

will establish the continuity of the tube and therewith enable the patient to swallow his food, a consummation most ardently desired by all.

It is in view of this invariable desire on the part of these patients in whom gastrostomy was performed that

17. Ach, Alwin: Berl. klin. Wchnschr., 1913, No. 18, p. 853.
18. Rehn, E.: Centralbl. f. Chir., 1913, No. 28, Supplement, p. 50.
19. Roepke, W.: Berl. klin. Wchnschr., 1913, No. 18, p. 853.
20. Kelling, G. E.: Centralbl. f. Chir., 1904.
22. Gluck, Th.: Berl. klin. Wchnschr., 1898, No. 42.

I have decided not simply to close the thorax in cases in which exploratory thoracotomy has shown the disease inextirpable, but to divide the esophagus in proper distance from the upper pole of the tumor and then transpose the oral stump extrathoracically, after closure of the distal part by inversion and suture (one personal observation so far).

From my experience gained in six cases of esophageal resection for advanced carcinoma I should advise to leave alone an infiltrating carcinoma behind the aortic arch which covers several inches of the tube, when performing thoracotomy on patients who show symptoms of *complete obstruction for some time* prior to operation. Attempts at removal will greatly weaken the resisting power of these reduced patients and eventually force the surgeon to continue radical work much against his wishes. On the other hand, palliative work — division of the esophagus above the stricture, closure of the distal end and extrathoracic transposition of the oral stump, as described before — do not tax the patient to any extent and will brighten the rest of his life.

It is, as a matter of course, impossible at the present moment to say which method of extrathoracic esophagoplasty will prove to be the preferable one. If the task of preventing regurgitation of stomach contents through the Jianu tube can be solved, then this method of gastrostomy and inferior esophagoplasty will be the operation of choice, principally on account of its simplicity and comparative absence of danger. If it will be shown, however, that this cannot be done and that the digestive effect of returning stomach juice will spoil plastic work that may become necessary later on, then the Wullstein-Roux method, or very likely Kelling-Vulliet's transposition of the excluded transverse colon will best be resorted to. At the present juncture it should be emphasized again that efforts of surgeons should be directed toward improving the functional working of Jianu's tube.

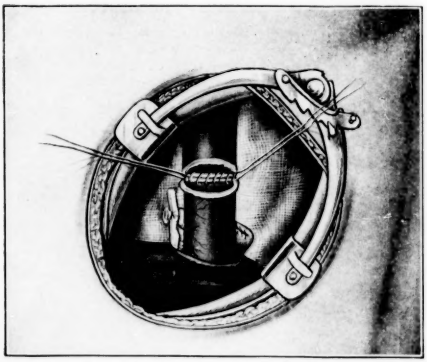


Fig. 24.—Inverted tip of Jianu tube released and cut off; redundant gastric mucosa clipped and both openings in process of end-to-end union by suture. There is splendid blood-supply up to the tip of the Jianu tube from the left inferior epiploic artery within the ligated major omentum, which latter always is to point toward the patient's right.

INTRATHORACIC ESOPHAGOPLASTY, EXPERIMENTAL

In cases in which examination previous to operation has shown the cancer to be located within the lower third of the esophagus, or localized right at the cardia itself (scirrhus) and immediate esophagogastrostomy does not appear feasible on account of the distance of the proximal end, the excellent plastic and well-nourished material of Jianu's tube makes one wonder whether or not the excised lower portion of the esophagus or cardia might be immediately replaced by this tube if brought up intrathoracically into the pleural cavity through the foramen esophageum of the diaphragm or alongside the cardia which had been closed by sutures after the resection (Fig. 23), its free opening to be united by end-to-end anastomosis with the oral stump of the esophagus which otherwise remains *in situ* undisturbed (Fig. 24).

CONCLUSION

As stated before, intrathoracic esophagoplasty, when properly worked out, would seem to be an ideal operation. If further observations in man, however, should prove that the transposed oral stump of the esophagus, no matter how long, has no tendency to become necrosed in its distal portion, but will live, as a rule, further experimental work for the perfection of intrathoracic esophagoplasty will be less urgent and extrathoracic esophagoplasty will become the operation of choice for resection of carcinoma in any part of the esophagus.

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A CASE OF RHINOPHYMA SUCCESSFULLY TREATED BY "DECORTICATION"

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For the following reasons and others, I report the following case of rhinophyma. The photographs of the patient were taken before and after the surgical intervention.

1. This chronic disease of the nose, although it is not painful and occurs almost invariably in males, who, as a rule, are less sensitive than females to facial disfigurement, always exposes its victims to ridicule, often makes employment difficult to obtain and not infrequently hampers a patient's whole career. Hebra gave the name of "rhinophyma" to this disease.

2. Owing to the fact, that in the treatment of this affection, medicinal and other non-operative measures never give satisfactory results, patients soon acquire the erroneous impression that cure is impossible.

3. Though Ollier long ago demonstrated that pound-nose (called by him *éléphantiasis des buveurs*) can be successfully treated by decorticating the nose, that is, by removing the diseased tissues, by the aid of the thermocautery or cutting instruments, surgeons in general seem to ignore the fact that this unsightly deformity can be corrected by an operation of great simplicity and of unfailing efficacy.

4. Complicated operative procedures have been devised for and recommended in the treatment of hammer-nose. Being based either on inadequate knowledge or faulty interpretation of the pathology of this condition all such operative measures should be discarded.

5. Some diversity of opinion exists as to the etiology and pathologic anatomy of rhinophyma. Coplin, who made the histologic examination of the tissues removed from Keen's[1] patient, diagnosed the condition from the pathologic point of view as a soft fibroma of the skin

1. Keen, William H.: Rhinophyma, Ann. Surg., 1904, xxxix, 665.

with distention of the acini and possibly a hyperplasia of sebaceous glands.

All observers are agreed that the diseased part presents an enormous hyperplasia of the connective tissue

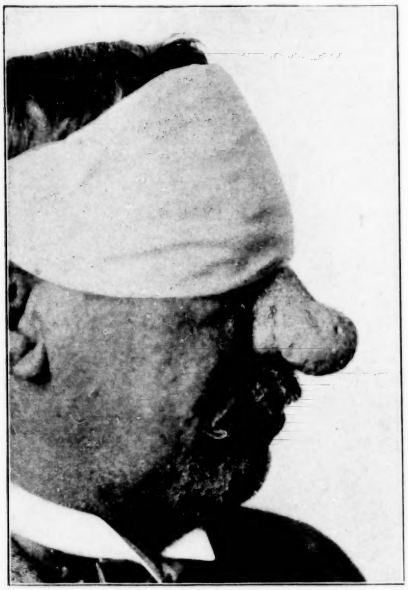

Fig. 1.—Case of rhinophyma before operation.

of the corium, a thickening, dilatation, tortuosity, a numerical increase of the cutaneous arteries, veins and capillaries and an increase and hypertrophy of the sebaceous glands, the excretory ducts of which show marked lengthening and dilatation. The latter is caused partly by the retained secretion, partly by the active hyperplasia of the glands.

History.—Mr. L., a Bohemian tailor, aged 48, married, was referred to me by Dr. Stulik for a nasal deformity which, according to the patient, made its appearance thirty-one years ago following an attack of chicken-pox. The patient eats lightly, drinks several glasses of beer daily, and does much walking. The family history is negative. The patient's health has always been good, and the physical examination, outside of the face and nose, is negative. The facial appearance frequently subjects him to embarrassment and mortification. Many physicians have treated the condition non-operatively with no improvement.

Examination.—The entire facial skin was seborrheic. The nose and the bordering cheek-areas were dusky red and presented a large number of thickened, dilated and tortuous cutaneous vessels, and many dilated, large, gaping sebaceous gland orifices, some of which were plugged with inspissated secretion. Many pustules, coexistent with acne rosacea, were on the cheek. The external portion of the nose was greatly hypertrophied; its tip consisted of a soft lemon-sized mass. The hypertrophy was limited to the superficial external portion and did not extend beyond the nasal orifice. The patient was sent to the hospital, was etherized, the eyes protected and the operative field (nose and cheeks) painted with tincture of iodin. Although decortication of the nose has been performed successfully under local anesthesia[2] (cocain, its synthetics, freezing mixtures, etc.), I prefer in these cases to use a general anesthetic.

Operation.—The index-finger of the left hand, introduced into one of the nostrils, stretched the soft tissues and held the thickness of the nose under control. This facilitated the modeling of the wings of the nose and guarded against the removal of too much tissue. The exuberant tissue masses on that side were then ablated with a sharp razor; the finger was introduced in the opposite naris and the same procedure repeated on the other side, care being taken during the entire operation not to injure the osteocartilaginous framework of the nose. The intent was to remove almost the entire diseased cutaneous portion of the nose, as the pathology of the disease is in this cutaneous covering. In rhinophyma, the nasal bones, the nasal cartilage, their fibrous covering and the endonasal lining show no apparent change and therefore should not be molested. To make the nose more presentable some paring was done here and there with scalpel and scissors, until the form of a normal nose was reached. It could easily be seen that the tissue removed contained degenerated and cystic sebaceous glands filled with epithelial débris and sebum. The operation somewhat resembles the whittling of a block of wood with a jack-knife.

Postoperative History.—The hemorrhage, profuse at first, was readily checked by compression with sterilized gauze. To prevent its recurrence, a hard-rubber nasal tube was introduced in each nostril, counter-pressure being thus secured from within against the pressure exerted from without by the gauze and bandage. The nasal tubes were removed in twenty-four hours. For the first forty-eight hours the postoperative treatment consisted of hot boric compresses applied every two hours to the operative wound. After that time the part was dressed with calamine lotion. Recovery was uneventful. At the end of eight weeks the wound was completely epidermized.

Fig. 2.—Appearance of patient after operation for rhinophyma.

2. Wood, James C.: Surg., Gynec. and Obst., 1912, xv, 622.

A number of points of interest are presented by this case of rhinophyma:

1. Its occurrence in a man whose occupation does not entail exposure to inclement weather, who is fairly moderate in his consumption of alcoholic beverages and who gives no history of gastric irritation or disturbance. The etiologic influence of alcohol is hard to determine; there are many alcoholics and but few cases of rhinophyma.

2. The fact that all but one of the patient's medical advisers (and he consulted a goodly number) seem to have been unaware of the relief which surgery offers in this condition.

3. The simplicity, safety, efficacy and short duration of the operative intervention, which consists in removing almost entirely the cutaneous covering of the nose, while carefully respecting its osteocartilaginous framework. A covering of greater or less thickness of the soft tissues must always be left. This direct operation is limited to the external superficial more or less modified parts. No complementary, autoplastic or skin-grafting operation is performed.

4. The satisfactory result, which can be seen when the photograph taken immediately before the operation is compared with that taken shortly after the patient's discharge. The new complete skin-covering for the nose was derived from the dermal margins of the wound and from the epithelium of the abundant and deep-lying remains of sebaceous glands.

In cosmetic surgery of the face I discard the thermo-cautery for the removal of exuberant tissues. It makes the employment of ether anesthesia dangerous. It has always seemed to me that the scar resulting from the cautery is less satisfactory from the esthetic point of view than the scar which results from cutting operations.

62
14

HAIR-BALLS OF THE STOMACH AND INTESTINE *

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The rarity of hair-ball coincident in the stomach and in the intestine has led me to report the following case, which also has an unusual symptomatology:

History.—The patient, H. C. A., aged 13, the daughter of a physician, with the exception of the usual diseases of childhood and a pneumonia at the age of 11, had always been in good health. When about 2 years of age she developed the habit of sucking her right thumb and at the same time twisting and pulling her hair with the left hand. At the age of 5, she was first noticed by her parents actually to put hair in her mouth and swallow it. This was observed occasionally in her up to her tenth year, but since that time it was thought that the habit had been discontinued and forgotten. She had always eaten heartily and digestion had been apparently normal until about one year prior to the present illness, when occasional attacks of stomach disturbance began, which were evidenced by stomach-ache, belching of gas, fetid breath, etc. These attacks, however, were not so frequent or so severe as to impress the parents as unusual.

Present Illness.—This began on the morning of July 19 with stomach-ache which was temporarily relieved by bowel action. Attacks of abdominal pain recurred during the day and night. She abstained from food during this time and there was no vomiting. Early the next morning, an attack of pain was followed by vomiting of bile and a bowel movement. Castor oil was administered but was rejected. The father, while examining the abdomen at this time, discovered the presence of a large sausage-shaped tumor which occupied the area between the ensiform cartilage and the umbilicus and extended crosswise from the cardiac area of the stomach to the region of the pylorus. The tumor on palpation was movable and tender. Examination of the lower abdomen elicited some tenderness over the appendix but otherwise was negative. The nature of the mass was a matter of doubt until a tuft of hair vomited a few hours later recalled to the father's mind the habit of hair-eating, and at once suggested the diagnosis of hair accumulation in the stomach. Dr. L. F. O'Neill, of this city, who saw her in consultation, concurred in the diagnosis. Two more attacks of pain and vomiting occurred during the second night. There was no disturbance of temperature or pulse. I examined the patient for the first time on the morning of July 21, having been called with regard to an operation. The findings previously described, together with the history, seemed to make the diagnosis clear.

First Operation.—This was performed at the Auburn City Hospital, July 21. A midline incision above the umbilicus exposed the stomach, which was seen to be the container of the mass. An incision about 3 inches in length was then made through the anterior wall of the stomach near the cardiac end, and through this a mass of firmly packed hair mixed with food particles and mucus was extracted. The hair tumor, which completely filled the cavity of the stomach and had adapted its form to the contour of the greater and lesser curvatures, weighed on removal 15 ounces. It measured 7¾ inches in length, 2½ inches in diameter, and 7 inches in circumference. The stomach incision was closed by three layers of continuous sutures, catgut in the mucous and muscular coats and linen in the peritoneal. The appendix was examined through the same incision, found to be thickened and injected, and was removed.

The patient, at the conclusion of the operation, was in good condition, and continued so for the next thirty-six hours. During this time two bowel movements occurred, one spontaneously and one by enema. About 6 p. m. July 22 she vomited nearly a quart of bile-stained fluid, and at 9:30 a like quantity of similar fluid. High enemas during the night resulted in free expulsion of gas with some fecal matter. No further vomiting occurred until 11:15 the morning of July 23, when, after the administration of 2 drams of calcined magnesia, she again vomited about a quart of bile-colored fluid. Castor oil was given an hour later and was retained for nearly six hours, when vomiting of about 8 ounces of bile-colored material mixed with oil occurred. After two further recurrences of vomiting and with distention of the abdomen beginning, it became evident that we had to deal with some form of ileus and that an exploration was indicated.

Second Operation.—The abdomen was opened through the original incision, at 5 a. m., July 24. As the patient seemed physically depressed an intravenous transfusion of normal saline solution was given during the operation. The seat of the gastrotomy was inspected and found satisfactory. No obstruction was found in the pylorus or duodenum, but a firm, movable mass was discovered in the ileum from which a firm mat of hair measuring 3 inches in length and completely occupying the lumen of the bowel was extracted after enterotomy.

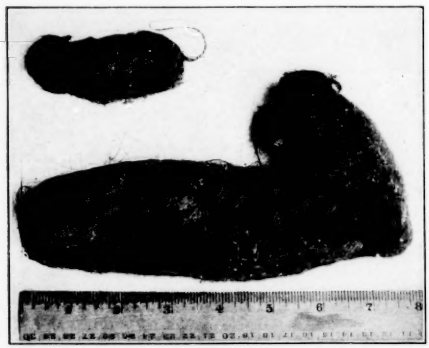
Postoperative History.—The patient showed some evidences of shock, but reacted promptly. No further vomiting occurred. The bowels moved freely during the first twenty-four hours succeeding the operation. Liquid food was begun at the end of eighteen hours and was well borne. With the exception of some fat necrosis in the line of the incision, the convalescence was uneventful. She was removed from the hospital to her home on the eighth day following admission. Since recovery from the operation she has been free from stomach symptoms and has gained 10 pounds in weight.

The presence of a hair-ball, hair-tumor or trichobezoar, as it is variously termed, in the human stomach,

* Read by title before the Medical Association of Central New York, at Auburn, Oct. 30, 1913

though infrequent, has ceased to be a very rare condition, over seventy cases having been reported in the literature. These reports include hair-tumors found throughout the gastro-intestinal tract at necropsy as well as in operations. Desiring to isolate the cases disclosed by operations, I have reviewed this literature and have been able to collect forty-one cases. Of these, thirty-five were gastrotomies for hair accumulations, which in some instances were prolonged into the duodenum; four were enterotomies or intestinal resections, in which one or more hair-balls were found in the ileum, while in two only both gastrotomy and enterotomy were performed in the same patient for separate hair-tumors, and in both instances the operations were performed at different times.

The habit of hair-swallowing appears to be practically confined to females. Of the forty-one cases with operation, all occurred in either girls or young women, the youngest[1] being 7, and the oldest[2] 37. In most instances, where a history was obtainable, the habit had existed from early childhood and had been continued over a period of several years, in one case,[3] thirteen years. The greater number have preferred their own hair, either pulling it out and swallowing it, or



Smaller object, in upper left-hand corner, hair-ball removed from ileum. Large mass below, hair-ball removed from stomach.

chewing the ends of braids or curls, and occasionally swallowing in addition such articles as bits of string, cotton, wool, etc., which have formed a nucleus for the hair tumor. In only two cases has hair from a foreign source been recorded: one patient,[4] a woman aged 30, a spinner of cow's hair, was in the habit of moistening her finger with the tongue and thus swallowed enough to form a spherical hair-ball in the stomach weighing about 4 ounces; the other patient,[2] a woman aged 37, a brush-maker by trade, ate the bristles used in making the brushes, and the hair-tumor found was composed of this material.

It is interesting to note that this peculiar habit has not as a rule been associated with mental enfeeblement, insanity or inebriety, but in the vast majority of cases occurred in persons otherwise quite normal. In a few cases a motive has been given in explanation of the practice. For example: Knowsley Thornton's patient[5] had for years been in the habit of "eating the combings of her hair and her sewing-cotton ends to clean her tongue"; Schönborn's patient[6] swallowed hers "to make her voice clear"; Jacobson's, because she liked the tickling sensation of the hair in its passage to the stomach.[7] In only three instances in this series has mention been made of any mental abnormality. One,[8] a girl of 16, was said to have always been hysterical; another,[9] aged 22, ate hair during delirium following an attack of grip; a third[10] occurred in a pregnant woman of 22, but there is no clear history to show that she had not eaten hair before her pregnancy.

The most frequent location of these hair-tumors is the stomach. It is relatively rare for them to be found in the bowel. In only six of the forty-one operations were hair-balls found in the intestinal tract. The tumor usually consists of a large accumulation of hair of varying length, firmly matted into a hard mass, which completely fills the cavity of the stomach, and is shaped by its walls into an exact cast of the organ. The general contour of these hair-balls of the stomach corresponds closely to the shape of the letter J, which reproduces the normal stomach outline as demonstrated by the Roentgen ray. In two cases,[2, 11] three distinct hair-tumors were found in the stomach, the separate masses adjoining each other by smoothly faceted surfaces. The hair-masses are not infrequently provided with processes which extend into either the duodenum or esophagus or both. Prolongation of the tumor into the duodenum occurred in seven of the cases reported. Just why more tufts of hair, which must be ingested in small quantities at a time, do not pass through into the bowel is not clear. One assumption is that the individual bits of hair reaching the stomach are caught in the mucous folds and thus retained, and that the subsequent additions gradually attach themselves to the primary nucleus in the slow formation of the mass. Hair-balls of the stomach often reach large proportions. The largest in this series is reported by L. Storey[12] as weighing 2½ pounds, but there are cases on record[13] in which the hair-mass weighed 4 pounds and over. The hair is usually mixed with food particles and is separated from the stomach-wall by a layer of mucus. From the weight of the contained mass the stomach-walls become hypertrophied, and the organ is frequently dilated and displaced. Practically all observers emphasize the mobility of the mass or the stomach itself. Langhaus[14] describes finding on the surface of the stomach whitish striae, due to distention, and resembling the striae of pregnancy. The mucosa seems to suffer the least, although small ulcers and even perforations have been noted in some of the necropsies.[15]

The symptomatology of hair-balls is far from characteristic and presents a wide range of variations. The only constant evidence of these masses in the stomach is the presence of a hard tumor in the upper abdomen.

1. Barling: Proc. Roy. Soc. Med. London, 1912-13, vi, 171.
2. Day, Donald: Brit. Med. Jour., Dec. 20, 1902, p. 1899.
3. Pell-Iderton: Brit. Med. Jour., Jan. 5, 1907, p. 18.
4. afSchulton, M. W.: Finska läk.-sällsk. handl., 1895, B, xxxvii, No. 9; Centralbl. f. Chir., 1896, No. 3, p. 68.
5. Thornton, J. Knowsley: Lancet, London, Jan. 9, 1886, p. 57; Tr. Path. Soc., London, xxxv, 159.
6. Schönborn: Arch. f. klin. Chir. (Langenbeck's), 1883, xxix, 609.
7. Jacobson: Tr. Med. Soc. State N. Y., 1901, p. 386; Med. News, 1901, xxxvi, 245.
8. Koeppelin: Operation by Sirand. Soc. de chir. de Lyon, June, 1901; Provence méd. (Lyon), 1901, No. 22, p. 295.
9. O'Hara: Wien. klin. Wchnschr., 1899, No. 5, p. 119.
10. Bruce: Canada Lancet, 1901, xxxv, 123.
11. Holland: Operation by Litler-Jones. Arch. Roentg. Ray, July, 1913, p. 6.
12. Storey, L.: Lancet, London, Jan. 25, 1913, p. 240.
13. Wölfler and Lieblein: Deutsch. Ztschr. f. Chir., 1909, No. 46.
14. Langhaus: Centralbl. f. Chir., 1908, No. 35, appendix, p. 121.
15. Butterworth: THE JOURNAL A. M. A., Aug. 21, 1909, p. 617.

V. 191

which has been variously described as cucumber-shaped, sausage-shaped, oblong or spherical, usually movable, and only slightly tender on palpation. In exceptional instances there have been no manifestations whatever on the part of the stomach. In Bruce's case,[16] in a pregnant woman of 26, a hard swelling, which gave no symptoms, was discovered in the upper abdomen two months prior to childbirth. Twin pregnancy was suspected. The persistence of the tumor after delivery led to an exploratory operation which disclosed a hair-ball of the stomach. The gastric symptoms vary in degree from mild digestive disturbance with dull aching in the stomach, often noticed over a period of months or years without seriously affecting the general health, to repeated severe attacks of colicky pain and vomiting. The pain and vomiting, as a rule, occur after meals, and when occurring over a long period result in loss of weight and strength from inanition. In Jacobson's case,[7] that of a girl of 11, the pains occurred almost entirely at night, and she frequently vomited frothy mucus, but no food. These symptoms began over two years before the operation. During this time she lost strength and became very nervous. In some cases constipation had been persistent, while in others there have been frequent attacks of diarrhea. Occasionally small masses of hair have been vomited or passed by bowel, and this occurrence has led to a correct diagnosis. In the case reported by Ranzi,[16] in a girl of 20, an attack of acute intestinal obstruction occurred four years before operation. This was relieved by high enemas, which brought away masses of hair. Two years later the patient began to have pain in the stomach, which increased during a period of two years, when an operation relieved her of a hair-ball of the stomach weighing over a pound. Of the six patients with hair-ball in the ileum, four were operated on because of symptoms of complete intestinal obstruction, the other two because of a mass in the abdomen associated with pain and vomiting. One[17] of these was thought to be tuberculous peritonitis, the other[18] a malignant tumor of the small intestine.

In considering the histories of many of the cases, together with the size of the hair-tumor removed at operation, nearly all being described as completely filling the cavity of the stomach, it would seem probable that these large masses often remain in the stomach for long periods, months or years, without producing marked symptoms or materially interfering with the health of the individual. The question naturally arises, What determines finally the onset of acute symptoms which calls attention to the tumor and demands operation? In my case, the presence of the hair-ball in the ileum was thought to be responsible for the pain and vomiting instead of the tumor in the stomach; but in other cases the same symptoms have developed without any intestinal mass to explain them. The only theory advanced is that the stomach normally is exceedingly tolerant of foreign bodies, but that Nature rebels when the limit of tolerance is finally reached.

The difficulty of diagnosis in these cases is attested by the fact that of the forty-one cases in which an operation was performed, in only nine was a correct diagnosis made before operation. In eighteen of the cases no diagnosis was made and the exploratory laparotomy was on account of the presence of a tumor. In the remaining cases, various conditions were suspected, such as floating kidney, movable spleen, omental or hydatid cyst, tuberculous peritonitis, malignant growth, and in one case, already mentioned, the hair-tumor was supposed to be a twin pregnancy. In the cases in which a correct diagnosis was made before operation, a history of the habit of hair-swallowing had been obtained, or hair had been either vomited or passed by bowel. For the most part, the existence of the trichophagia was discovered after operation, the patients having previously denied it. In one instance reported by Rehorn,[19] a girl of 18 persistently denied ever having swallowed her own or other hair even after a hair-ball, weighing nearly 10 ounces, had been removed from her stomach.

The use of the Roentgen ray in the diagnosis of hair-ball of the stomach has only recently been emphasized by C. Thurstan Holland of Liverpool, England, in an article[11] reporting the case of a young woman of 29, who was admitted to the Royal Infirmary with a large hard tumor of the upper abdomen, but without any definite history. As the woman could not swallow anything in the nature of thick food, she was given a mixture of barium sulphate in milk and a roentgenogram was taken immediately afterward. This showed the distinct outline of three closely adjoining masses completely filling the cavity of the stomach. Operation later recovered three large hair-balls. Holland believes his to be the first description of the Roentgen-ray appearances in such a case. In one other report[20] mention of a roentgenogram is made, but in this case it did not lead to a correct diagnosis.

The operative treatment of hair-ball of the stomach has been attended by signal success. In the thirty-five gastrotomies reported, not a single fatality has occurred. Only two cases[18, 21] in the series resulted in death, and in these operations were done on nearly moribund children suffering from advanced intestinal obstruction due to hair accumulations in the ileum.

The two cases which at all parallel the one that I report are of interest in this connection. Bell's case[22] was that of a bright, intelligent girl of 12, who for nearly two years had attacks of vomiting, diarrhea and abdominal pain. The vomitus consisted mainly of frothy mucus, with at times particles of food. Six months prior to operation she had a very severe attack of vomiting and diarrhea, when a mass was felt in the abdomen, which was thought to be an abscess of the liver. The history showed that when she was 3 years of age she had a habit of breaking her hair with the fingers and that some difficulty was experienced in overcoming the habit. A diagnosis of probable hair-ball was made. Gastrotomy was performed and a large hair-cast of the stomach, together with a detached mass in the duodenum, was removed. At a second operation a hair-ball of the intestine, 8 inches in length, was extracted. At a fourth operation a section of the small intestine was found riddled with openings, and 2 inches of the intestine were resected. Other perforations developed and it was necessary again to resect a portion of the bowel, when a Murphy button was used, which she passed. Six months after her admission to the hospital, after undergoing eleven operations, she was said to be "on the high road to recovery."

Scott-Turner's case[23] was in a woman, aged 29, who had been suffering for several years from intestinal colic

16. Ranzi: Wien. klin. Wchnschr., 1904, No. 50, p. 1343.
17. Terman: Hygeia, June, 1906, p. 576.
18. Sprengel: Verhandl. d. deutsch. Gesellsch. f. Chir., 1912, p. 217; Berl. klin. Wchnschr., 1912, No. 19, p. 921.
19. Rehorn: Nord. Med. Ark., 1902, xxxv, 25.
20. Mouriquand: Provence méd. (Lyon), 1907, xlix, 957.
21. Brewster: Boston Med. and Surg. Jour., 1900, No. 15, p. 395.
22. Bell, J.: Montreal Med. Jour., February, 1903, p. 94.
23. Scott-Turner: Brit. Med. Jour., 1906, ii, 1126.

with symptoms of intestinal occlusion. Operation disclosed an obstructing hair-ball in the ileum. Four weeks later symptoms of pyloric stenosis supervened and the material vomited contained hair. Gastrotomy was performed and a hair-ball was found impacted in the pylorus. Recovery ensued.

In both these cases of multiple hair-balls involving the stomach and intestine, the presence of another mass was unsuspected at the first operation. These experiences, together with mine, indicate that a thorough examination of the entire gastro-intestinal tract should be made before closure of the abdomen in every operation for hair-ball.

The other cases reported in the literature are nearly all taken from necropsy records, death having ensued from inanition, perforation or obstruction, the diagnosis being made post mortem. With increasing familiarity with this class of tumors should come an earlier recognition of an operable condition and a steady decrease in such a heavy mortality.

CHOREA

WITH REPORT OF TWO CASES IN WHICH STREPTOCOCCUS VIRIDANS WAS FOUND IN THE BLOOD *

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Ever since Roger in 1866 classed rheumatism, chorea and endocarditis as manifestations of the same pathologic entity there has been much controversy as to the etiology. A review of the literature leaves no doubt that there is a relationship between these diseases. Sturges, Peacock, Owen, Wollenberg, Osler, Hughes, See, Brown, Batton, Meyer, Bright, Garrod, Herringham, Mackenzie and many others have written on this relationship, and have given statistics showing a relationship in from 15 to 80 per cent. of all cases. There are those who conclude that no definite relationship can be established, and at the other extreme there are those who, like Roger, assert that acute rheumatism, chorea and endocarditis are but different manifestations of the same underlying disease. Of late Butler, Hoskins, Anderson and MacAlister have published studies on this relationship. In the main this relationship is based on clinical findings, such as the very frequent association of rheumatism, chorea and endocarditis.

Of late years more attention has been paid to the bacteriology of chorea. To quote from Church:

> Dana found a coccus in a case of chorea in which there was a leptomeningitis of the brain and of the upper part of the cord. In a severe case of chorea and rheumatic endocarditis Triboulet found Achalme's bacillus. In two cases Apert found Triboulet's coccus. Westphall, Wassermann, and Malkoff found a coccus in the brain of one patient. Poynton and Paine isolated a similar coccus in several cases of chorea. In three cases Beaton and Walker found the same coccus.

Camisa and Guervier have independently reported the finding of cocci in the blood of chorea patients. In their reports the cultural characteristics are not fully given, but so far as given there is no difference between their findings and those of Poynton and Paine.

In January of this year Collins reported a case of chorea as cured by treatment with an autogenous vaccine prepared from a coccus obtained by lumbar puncture.

The following cases are reported, one in Bellevue Hospital from the service of W. Gilman Thompson, and one in private practice.

CASE 1.—*History.*—On admission of the patient, a woman, aged 20, to the hospital, her speech was so inarticulate that it was difficult to obtain a history. The following was learned from visitors: The father and mother were dead—cause not known. The patient had no brothers or sisters. There was no history of any of the common diseases of childhood. The patient had not had typhoid, malaria, rheumatism, tonsillitis, torticollis or chorea. The patient was unmarried, and had one child 4 months old. So far as could be ascertained the patient's pregnancy was normal excepting for occasional vomiting. There was no history of venereal disease.

About April 1, 1913, the patient's right wrist became painful, swollen and hot. At the same time speech became inarticulate. Also she began to have involuntary spasmodic movements, especially marked in the head, but occurring throughout the body. The pain in the right wrist lasted about two days, after which the small joints of the right hand became involved. This did not clear up. On April 29, the left hand became involved in all joints. The patient was unable to sleep on account of the jactitation.

Physical Examination.—This revealed an acute multiple arthritis, a chronic valvular endocarditis, and pyorrhea alveolaris. Otherwise it was negative. There were no petechiae. The temperature on admission was 101 F. and gradually rose to 106 F. at the time of death three days later. The pulse and respirations were commensurate with the temperature.

Blood-Culture.—April 29, 1913, a culture of blood from a vein was made in North's agar at 43 C. (109.4 F.) by pouring five plates. The temperature of the incubator was 37 C. (98.6 F.). No growth appeared on any plate for eight days, when all showed colonies of the following characters:

1. They were uniformly distributed on the plates (from five to nineteen colonies to a plate) and formed below the surface of the medium.

2. The colonies and the immediate vicinity were green. In growths without blood this color did not appear.

3. The colonies were pin-point in size and did not greatly enlarge on further incubation.

4. There was no hemolysis.

5. When grown in broth, chains of eight to ten were formed. Each coccus was very small, and sometimes slightly elongated. When grown in bile medium the cocci were not dissolved. Litmus milk showed acid production in three days with coagulation, but no peptonization. Acid was produced in the following carbohydrate mediums: lactose, dextrose, arabinose, raffinose and saccharose, but not in dextrin, mannite and salicin. Inulin was not coagulated after ten days. (These cultural methods were suggested by Dr. Thro, who will publish his methods in detail later.)

6. The coccus retained the Gram stain.

7. There were no capsules.

Control.—The blood from a convalescent typhoid patient was used as control, and all plates remained sterile. The bloods were taken within a few minutes of each other and were treated exactly alike.

May 1, 1913, another specimen of blood was taken, controlled and treated in the same manner. The same coccus was again isolated and treated to the same cultural tests with the same results.

CASE 2 (from private practice).—*History.*—The patient was a girl aged 9. The father was alive and well. The mother had an acute rheumatic fever twice, followed by chronic endocarditis. The patient had acute rheumatic fever when 3 years old, complicated by endocarditis, and had had tonsillitis frequently. In December, 1912, the patient's heart lost compensation following a severe attack of tonsillitis.

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* This article is abbreviated in THE JOURNAL by omission of the bibliography. It appears in full in the author's reprints, a copy of which will be sent by him on receipt of an addressed stamped envelope.

On this account she was kept in bed and given a milk diet. At this time there was no fever. Later, in May, 1913, however, a low grade of fever developed, and in a few days a well-marked chorea. There was no joint involvement. The heart at this time was fairly well compensating. With the development of the chorea the child became stupid and the jactitation of her arms and face so marked that she had very little sleep.

Blood-Culture.—May 30, 1913, a culture of blood from a vein was made in North's agar, poured in five plates. The temperature of the incubator was 37 C. No growth appeared on any plate for six days, when four plates showed colonies (one remained sterile) of the same character as the colonies in the preceding case, excepting that acid was not produced in saccharose. The staining characters were the same as in Case 1. The control was accomplished in the same manner as in Case 1.

June 15, 1913, the coccus grown from Case 2 was used in the preparation of an antigen and the patient's serum was tested against it with positive result for complement fixation. The serum from a convalescent typhoid was used as control, and the test was negative. The technic was that of Schwartz and MacNeil for gonococcus and of Hastings for streptococcus. A second test was made with stock-mixed antigen prepared from two strains of *Streptococcus viridans* isolated from the blood of two patients with chronic infectious endocarditis. The test was positive.

June 20, 1913, cultures were made from the crypts of the tonsils in Case 2 and a coccus culturally identical with the coccus found in the blood was found. An antigen was made from this coccus and tested against the patient's serum. The result was positive. The blood was again taken from the vein of the patient as before. The same coccus was isolated. This time it was obtained on all plates. The complement-fixation tests as done on June 15, 1913, were repeated with positive results.

A study of these cases shows that the organism found in the blood in the two cases in no way differs from the description of the *Micrococcus rheumaticus* of Poynton and Paine, but on the other hand it is culturally identical with the description of the green-producing streptococcus of Schottmueller. The fact that the coccus of Schottmueller and the coccus of Poynton and Paine are culturally identical was observed by Hastings in 1912, and later worked out by Thro at the suggestion of Hastings.

Undoubtedly the coccus isolated by Dana and others mentioned before is identical with the coccus found in the two cases reported. The number of cases, however, is too small to form definite opinions as to the etiology of chorea. Certainly more work along these lines is indicated. That the coccus found in the blood is associated with endocarditis there is no doubt; but that it is the etiologic factor sine qua non in chorea is not proved.

The peculiarities of the coccus isolated are as follows:

1. It is of very slow growth. Sometimes the *Streptococcus viridans* does not appear in the original blood-culture for twelve days.
2. Green is produced on blood-agar plates.
3. It is of relatively slight toxicity.
4. It is not dissolved by bile as is the pneumococcus.
5. It does not peptonize milk as does *Micrococcus zymogenes*.

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Encouraging the Health Department.—Every thoughtful citizen should know what work the health department is doing and the extent of protection from disease that is being given to him and to those dear to him. Such interest will in itself insure more efficient work, for the health department needs the moral support, the approval and at times the cooperation of all intelligent citizens.—John W. Trask, *Pub. Health Rep.*

RELATION OF THE PATHOLOGY AND THE CLINICAL SYMPTOMS OF SIMPLE AND EXOPHTHALMIC GOITER *

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I have recently reviewed in fixed tissues the pathology, both gross and microscopic, of all the thyroid glands now in the laboratories of the Mayo clinic which have been removed from patients on the "exophthalmic goiter" list from Jan. 1, 1905, to Jan. 1, 1912, a total of 1,208 exophthalmic thyroids. My report on these specimens has been published elsewhere.[1] I have also examined, in the same manner, all the thyroids now in the laboratory removed from patients on the clinical "simple goiter" list from Jan. 1, 1905, to June 1, 1913, a total of 2,356 simple goiters.

The clinical grouping of these cases is not so simple as would be indicated by the two lists, "exophthalmic" and "simple." While the lists express their clinical grouping as the cases would ordinarily be arranged in most clinics, Plummer[2] has recently differentiated the goiters into three clinical groups: A, true exophthalmics distinguished by relatively rapid development, exophthalmos, etc.; B, toxic non-exophthalmics distinguished from the preceding by slow development, absence of exophthalmos, etc.; and C, non-toxic goiters, distinguished from both of the preceding by entire absence of toxic symptoms. It is therefore necessary to remember that in our "exophthalmic goiter" list, 79 per cent. are true exophthalmics, 21 per cent. are toxic non-exophthalmics and in the "simple goiter" list, 17 per cent. are toxic non-exophthalmics and 83 per cent. are non-toxic.

Each acinus of the thyroid gland can take on changes unlike those found within those adjoining it. Hence it is necessary in attempting to determine the dominant pathologic condition of the gland for purposes of classification to make a detailed analysis from the study of sections from many areas and finally to summarize the tabulated record of the observations. Such a summary can best be made from a tabulation in which numerical equivalents are used wherever possible to indicate degrees, amounts, etc. Without going into the minutiae of the specimens which I have examined, I wish to present herewith a broad summary of the results.

An examination of the accompanying table will reveal the following salient points:

1. Practically all cases of clinically true exophthalmic goiter show marked primary hypertrophy and hyperplasia of the parenchyma of the thyroid gland. Furthermore, as I have shown elsewhere,[3] the clinical stage of development of the disease is paralleled by the stage of development of the pathologic condition in sufficiently marked degree that one may estimate the clinical condition from the pathologic examination with about 80 per cent. of accuracy. The degree of severity of the clinical condition is similarly paralleled by the pathologic condition of the gland. The relationship between hypertrophy and hyperplasia of the thyroid gland and the clinical symptoms of true exophthalmic goiter is remarkably constant.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

1. Wilson: Am. Jour. Med. Sc., 1912.
2. Plummer: Am. Jour. Med. Sc., 1913.
3. Am. Jour. Med. Sc., 1913, and New York Med. Rec., 1913.

2. While mild degrees of hypertrophy and hyperplasia within physiologic limits may be present in the thyroid gland, particularly in the young and during pregnancy, yet the absence of this condition in the thyroids of adults coming to operation for toxic non-exophthalmic and non-toxic goiters is most striking. Without making any allowance for either clinical or pathologic errors of diagnosis, less than 1 per cent. of all cases coming to operation for goiter show any considerable primary hypertrophy and hyperplasia of the parenchyma of the thyroid except as associated with clinical symptoms of true exophthalmic goiter.

3. Eleven per cent. of all the thyroids on the "simple goiter" list showed as their principal pathologic change a secondary regeneration of atrophic parenchyma. This secondary regeneration of atrophic parenchyma is marked by the development, usually on one side of an acinus, of multiple, small, new acini composed of embryonic or cuboidal epithelium surrounding a minute cavity in which is found a very small amount of usually quite densely staining colloid. This newly developed tissue may extend out into the acinus in an irregular mass which can usually be readily distinguished from the papillae of a primary hypertrophy by the small size of its cells as compared with the very large columnar cells encapsulated adenomas. All of these were from patients with clinically toxic non-exophthalmic goiter.

6. Forty-five per cent. of the thyroids from patients on the "simple goiter" list were composed principally of encapsulated adenomas. More than half of these are distinctly of the so-called fetal adenoma type, that is, they consist of acini made up of small cuboidal or embryonic epithelium in spheroidal or columnar groups without lumina. The term "fetal adenoma" is somewhat misleading since the thyroid in late fetal life is made up almost entirely of acini with definite lumina.

The smaller portion of the adenomas contains so many acini with lumina that one is not warranted in classifying them at all as fetal and I have consequently grouped them as adult adenomas.

7. Less than 0.5 per cent. of the thyroids from patients on the "exophthalmic goiter" list but more than 44 per cent. of the thyroids from patients on the "simple goiter" list consist principally of groups of dilated acini filled with thick densely staining colloid material and lined with atrophic parenchyma. While many of these show varying amounts of stroma more or less segregating groups of acini, none of them have been placed in this class if they showed any considerable amount of

CLASSIFICATION (IN PERCENTAGES) OF THE PRINCIPAL PATHOLOGIC CHANGES IN 3,564 THYROIDS REMOVED AT OPERATION FOR GOITER

1208 Thyroids from Patients on "Exophthalmic Goiter" List		Principal Pathologic Changes	2356 Thyroids from Patients on "Simple Goiter" List	
Clinically true exophthalmic goiter.	79%	Primary hypertrophy and hyperplasia of parenchyma.	0.6%	Clinically 17% toxic non-exophthalmic goiter, and 83% non-toxic goiter.
	(3%)	A Early.		
	(34%)	B Advanced.		
	(41%)	C Regressing.		
	11%	Secondary regeneration of atrophic parenchyma.	9.0%	
	10%	D		
		Adenomas.	45.0%	
Clinically toxic non-exophthalmic goiter.	(4%)	E Fetal.	(6%)	
	(5%)	F Degenerating fetal.	(17%)	
	(1%)	G Adult.	(22%)	
		Primary atrophy of parenchyma.	44.0%	
		H Adenomatoses, diffuse colloids, etc.		
		Malignant tumors.	1.5%	

which mark the latter. These secondary regenerations are almost invariably recent enlargements of old "colloid goiters" whose primary atrophy must have occurred years before.

4. Besides the 11 per cent. of glands of this type noted on the "exophthalmic goiter" list, 9 per cent. of the glands on the "simple goiter" list were of the same type. All the thyroids from patients on the "exophthalmic goiter" list which showed secondary regeneration were from patients whose clinical symptoms were marked toxic non-exophthalmic. Similarly, about half of the thyroids on the "simple goiter" list showing secondary regeneration were from patients who clinically gave symptoms of toxic non-exophthalmic goiter. Thus in all, above 75 per cent. of the thyroids showing secondary regeneration of atrophic parenchyma were associated clinically with symptoms of chronic toxic non-exophthalmic goiter. It would appear from this that the pathologist is safe in saying that a colloid goiter which presents a large amount of regeneration is from a patient presenting chronic toxic non-exophthalmic symptoms. It must be remembered, however, that in a large number of the glands the process is too indefinite to permit the pathologist correctly to estimate the clinical condition of the patient.

5. Ten per cent. of the thyroids from patients on the "exophthalmic goiter" list were composed principally of definitely encapsulated tumors. While these partially encapsulated groups of acini may represent definite growth centers, it seems quite as probable that their partial segregation may have occurred from irregular development of the stroma after the beginning of the pathologic process. The terms "adenomatoses" and irregularly diffuse colloid thyroid may properly be applied to them.

"I Do Not Know."—While Maimonides could be so positive in his opinions with regard to a subject on which he felt competent to say something, he was extremely modest with regard to many of the great problems of medicine. He often uses the expression in his writings, "I do not see how to explain this matter." He quotes with approval from a rabbi of old who had counseled his students, "Teach thy tongue to say, 'I do not know.'" In this, of course, he has given us the best possible evidence of his largness of mind and his capacity for making advance in knowledge. It is when men are ready to say, "I do not know," that progress becomes possible. It is very easy to rest in a conscious or unconscious pretense of knowledge that obscures the real question at issue. A great thinker who lived in the century in which Maimonides died, Roger Bacon, set down as one of the four principal obstacles to advance in knowledge—indeed, as *the* one of the four that hampered intellectual progress the most—the fact that men feared to say, "I do not know."—Walsh, Makers of Medicine.

THE IODIN CONTENT OF THE THYROID GLAND

WITH ESPECIAL REFERENCE TO THE PATHOLOGIC TYPES AND A REVIEW OF SOME EXPERIMENTAL WORK *

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For many years it has been known that the normal thyroid contains a small amount of iodin in combination with a protein or albuminous substance.

The object of this paper is to present a study of the iodin content of toxic thyroids as observed in the normal and pathologic glands removed at necropsy and in the pathologic glands removed at operation in the Mayo clinic, and also to review some experimental work pertaining to the metabolic function of this gland.

The results of nearly 200 iodin determinations which have been made in the Mayo clinic agree in general with the results which have been obtained by others who have worked along this same line. Wherein our results differ from the usually accepted findings will be shown by a comparison of the data. The same method of determining the iodin content was used which Hunter[1] advocates and the precautions which he mentions in his original article on the subject were observed. In all these iodin determinations blank controls were run with each analysis, and every analysis represents the average of from 2 to 6 tests on the same gland. Every precaution was taken in the preparation of the desiccated thyroid. The glands were finely minced within a few minutes following their removal. When it was not desired to use the entire gland, representative parts were taken. These portions were dried to a constant weight and powdered finely enough to pass through an eighty-mesh sieve.

A brief outline of the Hunter method is as follows:

One gram of desiccated thyroid gland is mixed in a nickel crucible of about 125 c.c. capacity, with 15 gm. of a mixture composed of 138 parts by weight of anhydrous potassium carbonate, 106 parts of anhydrous sodium carbonate and 75 parts potassium nitrate, and an additional 5 gm. of this fusion mixture spread evenly over the surface. The crucible is then heated over a free Bunsen flame until no further carbonization is observed; it is cooled and the friable residue dissolved in about 150 c.c. of distilled water. To this solution contained in an Erlenmeyer flask of about 500 c.c. capacity, is added approximately 50 c.c., or its equivalent, of fresh liquor sodae chlorinatae U. S. P. (containing 2.4 weight per cent. of chlorin). The mixture is then treated with enough phosphoric acid (1 volume of the 85 per cent. syrup and 1 volume of water), to produce a marked yellow tint of free chlorin, an additional 10 c.c. of the phosphoric acid is then added and the contents of the flask boiled for about one-half hour or until the volume has been reduced to about 150 c.c. The liquid is cooled, 10 c.c. of 1 per cent. aqueous potassium iodid solution is added and the liberated iodin titrated with two-hundredth-normal sodium thiosulphate, adding starch paste as the indicator just before the end of the reaction. The two-hundredth-normal sodium thiosulphate may be made by diluting 25 c.c. of exactly tenth-normal thiosulphate to 500 c.c.; it changes strength rapidly and should be prepared fresh at each time determinations are made. One cubic centimeter of two-hundredth-normal thiosulphate corresponds to 0.0001058 gm. iodin derived from the sample of thyroid used.

Usually it is true that the iodin content of the normal thyroid is the greatest; the content of the colloid gland is less and that of the parenchymatous hypertrophic and hyperplastic gland is least per gram weight of dried gland. Roughly estimated, the normal thyroid will contain about 2.5 mg., the colloid gland about 1.5 mg. and the hyperplastic gland about 0.5 mg. of iodin per gram weight of dried gland.

An analysis of the iodin determinations which were made from 49 glands removed in the surgical treatment of hyperthyroidism is presented in the accompanying tables. The parenchymatous hypertrophic and hyperplastic glands are classified in three groups—A, B and C, A and B being those glands which show very marked hypertrophy and hyperplasia and C being those glands which show regression stages with a greater amount of more or less densely staining colloid.

This histologic classification is from that proposed by Wilson.[2] The chemical study was completed without a knowledge of the histologic classification in order that there might be no possibility of a biased finding.

TABLE 1.—EXOPHTHALMIC GOITERS OF GROUPS A AND B (PARENCHYMATOUS HYPERTROPHY AND HYPERPLASIA) ON WHICH IODIN DETERMINATIONS WERE MADE*

Of No.	Sex	Age	Dates of Ligations		Date of Operation	Weight	Amount	Density	Amt. of Iodin
63655	F	27	2/ 5/12		8/ 7/12	160	2	2	0.23
65575	F	32	3/28/12		7/25/12	130	3	2	0.66
66360	F	25	4/15/12	4/20/12	10/21/12	40	1	2	0.20
66872	F	27	4/23/12	5/ 1/12	11/ 4/12	50	1	1	0.12
67290	F	26	5/ 4/12	5/14/12	10/24/12	100	2	2	0.28
67491	F	20	5/11/12	5/16/12	9/24/12	50	2	2	0.90
67993	M	17	6/ 1/12	6/ 8/12	10/ 3/12	110	3	1	0.26
68459	F	19			6/ 6/12	80	2	2	0.25
68720	F	34	6/17/12		10/ 8/12	45	3	1	0.28
69198	F	50	6/ 9/12	7/ 4/12	10/ 2/12	75	3	1	0.15
68208†	F	22			7/22/12	60	3	3	1.17
70239	F	35	7/25/12	8/ 6/12	11/11/12	70	1	1	0.38
74094	F	48	10/ 1/12		10/ 8/12	20	2	1	0.41
49547	F	18	10/ 2/12		10/ 9/12	55	3	2	0.88
74127	M	43	10/ 3/12		10/10/12	30	3	1	0.57
74735	F	30			10/19/12	40	2	2	0.73
75124	F	28	10/28/12		11/ 6/12	40	2	2	1.27
75531	F	18	11/ 7/12		11/15/12	40	2	2	0.80
75743	F	29	11/11/12		11/15/12	75	1	1	0.48
75733	F	31			11/12/12	50	2	2	0.92

* The dagger (†) in the column of official numbers designates the specimen belonging to Group A; the others belong to Group B.

As will be seen from a study of Tables 1 and 2, twenty of the forty-nine glands of the parenchymatous hypertrophic and hyperplastic class are of the Groups A and B (early and advanced parenchymatous hypertrophy and hyperplasia). The average iodin content of these twenty glands is 0.54 mg. per gram weight of dried gland. The smallest amount of iodin found in any of these markedly hyperplastic glands was 0.12 mg. per gram weight of dried gland. The largest amount was 1.27 mg. There were twenty-nine glands of the hyperplastic type which histologically are classified in group C (regressing parenchymatous hypertrophy and hyperplasia). The average iodin content for this group is 1.52 mg. of iodin per gram weight of dried gland. The smallest amount of iodin found in any gland of this group was 0.44 mg. per gram of dried gland, and the largest amount was 4.79 mg. It is among the glands found in this group that our findings differ from the results as recorded by Marine and Lenhart[3] working along this same line. From Table 2, it is noted that there are three cases in which the iodin content was found to be well above that which is generally accepted to be the average amount

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

1. Hunter: Jour. Biol. Chem., vii, May, 1910.

2. Wilson: Northwest Medicine, January, 1913.

3. Marine, David, and Lenhart, C. H.: Relation of Iodin to the Structure of Human Thyroids, Arch. Int. Med., November, 1909, p. 440.

found in the normal thyroid, and there are sixteen cases which show an amount above 1.30 mg., which is usually accepted as the minimum for normal thyroids. In other words, about 33 per cent. of hyperplastic glands show a high iodin content.

Many of the glands analyzed for iodin were from patients who had a ligation previous to the time of removal of the gland. The question naturally arises, Did the ligation affect the iodin content? From the table showing thyroids of groups A and B—those representing early and marked hypertrophy and hyperplasia—it is noted that there are only four patients in whom ligation was not done previous to operation. The average iodin content from these four patients is found to be 0.77 mg. The average iodin content for the sixteen patients in whom ligation had been done shows 0.49 mg. The glands of these groups then show a loss in the iodin content following ligation.

TABLE 2.—LIST OF EXOPHTHALMIC GOITERS OF GROUP C (PARENCHYMATOUS HYPERTROPHY, HYPERPLASIA AND REGRESSION) ON WHICH IODIN DETERMINATIONS WERE MADE

Of. No.	Sex	Age	Dates of Ligations		Date of Operation	Weight	Amount	Secretion Density	Amt. of Iodin
64856	F	44	3/ 7/12,	3/12/12	5/ 3/12	100	2	2	0.44
65551	F	41	5/15/12,	5/23/12	8/28/12	30	3	2	1.53
67093	F	28	5/18/12,	5/28/12	10/ 1/12	90	3	2	1.54
68378	F	32	6/ 1/12,	6/ 6/12	11/ 6/12	80	3	2	1.21
68390	F	28	6/ 4/12,	6/10/12	9/ 4/12	50	3	2	0.46
68790	F	43	6/29/12		10/ 7/12	30	2	2	0.49
69368	F	20	7/ 1/12,	7/ 8/12	11/ 1/12	30	3	2	1.54
70458	F	34	7/18/12		12/20/12	70	3	2	0.46
70539	M	38	7/26/12		10/24/12	35	3	3	1.12
70821	F	51	7/31/12,	8/ /12	12/11/12	70	2	2	0.45
72542	F	38	8/28/12		9/ 4/12	40	2	2	0.53
73226	F	39	9/10/12,	9/19/12	10/10/12	90	3	3	1.18
73217	F	36	9/16/12		9/24/12	47	3	3	1.29
73011	F	34	9/18/12		9/24/12	35	3	4	4.74
73815	M	29	9/25/12		10/ 3/12	100	3	3	1.72
73863	F	42	9/27/12,	10/ 5/12	10/10/12	25	3	3	1.02
73016	F	32	10/ 1/12,	10/ 7/12	Aut. 175		4	4	4.79
73982	M				Aut. 170		3	3	2.18
74095	M	18	10/ 7/12,	10/14/12	2/ 1/13	30	3	3	2.18
74284	F	23	10/ 9/12		10/19/12	50	3	3	1.65
74930	F	29	10/18/12		10/28/12	45	2	3	1.51
74909	F	26	10/18/12		10/28/12	80	3	3	1.65
74873	F	34			10/19/12	30	2	2	0.99
74929		35	10/30/12		11/ 7/12	50	2	3	1.24
75164	F	39	10/30/12		11/ 9/12	45	3	3	1.66
75498	M	26	11/ 2/12		11/ 2/12	90	3	3	1.46
75496	M	30	11/8/12		11/15/12	90	4	3	1.94
76959	F	35			12/11/12	65	2	3	1.87
77136	F	34	12/14/12		12/20/12	50	3	2	1.09

The same condition is found to be true in the glands listed in Group C. There are twenty-nine glands of this group on which iodin determinations have been made. Only three from this group have not had ligations previous to removal. The average iodin content of these three glands is found to be 1.68 mg., while the content of the twenty-six glands of this group which had a previous ligation show an average iodin content of 1.50 mg. When the iodin content of the whole class of hyperplastic glands is considered and the content of the non-ligated glands compared to the content of those which have had a previous ligation, it is found that the average for the non-ligated glands is slightly below those which have been ligated.

It is our opinion, from a study of the preceding data, that ligation in the majority of cases slightly decreases the iodin content of hyperplastic glands. It is true that the averages of the non-ligated cases are computed from a small number. However it is significant that the results are similar in both groups of cases.

Does age play any part in the amount of iodin found in the hyperplastic gland? Ten patients who were between 17 and 30 years of age show an average iodin content of 1.02 mg. Ten patients who were all above 30 years of age show an average iodin content of 0.71 mg. It is evident from these figures that hyperplastic glands of patients from 30 to 50 years of age contain less iodin per gram weight than do those glands from patients of 15 to 25 years of age.

The size of the hyperplastic gland also seems to bear some relation to the amount of iodin per gram weight of dried gland. The larger glands of group C are found to have less iodin per gram of dried gland than the smaller glands. An average of eleven of the larger glands of Group C show 1.37 mg. of iodin as compared with 1.59 mg., the average of eleven small glands. The same condition also exists in the case of glands of Groups A and B. Averages on eight large and a like number of small glands from these groups show the amount of iodin as 0.33 mg. in case of the large glands as compared to 0.56 mg. in case of small glands.

In considering the amount of iodin found in the thyroid, at least two factors regarding the nature of the colloid substance must be considered. The first factor of importance is the amount of colloid. The second factor is the density of the colloid. There are certain hyperplastic glands which have large acini, filled with a thin or watery secretion, which do not have so great an iodin content as some other glands whose acini may not be so large but whose secretion is denser. As a rule, the denser the secretion, the deeper it stains and the larger amount of iodin it contains.

The iodin determinations of seventeen simple colloid goiters classified in Group II (colloid thyroids) show an average iodin content of 1.84 mg. of iodin per gram weight of dried gland. The minimum amount found in any of the colloid glands was 0.41 mg. per gram weight and the maximum amount was 3.33 mg. These variations are about the same as those found by Marine and Lenhart,[3] except that both our maximum and minimum are slightly below what they found.

It is usually found that the pure fetal adenomas contain very small amounts of iodin. This is to be expected, as the colloid in such glands is small in amount and rarely of much density as shown by its staining reaction.

In connection with this work on the iodin content of the thyroid as found in pathologic specimens, I have carried out a series of experiments on dogs to determine to what extent the iodin content of their thyroids would be affected by the administration of the iodids and which form of medication would produce the greatest increase in iodin content.

Fourteen dogs have been used in these experiments. In selecting the dogs, endeavor was made to obtain dogs as near the same size and weight as possible. Previous to the time of beginning the experiments, they were kept under the same conditions as to housing and feeding. During the period of administration of iodids, the dogs were kept and fed under the same conditions. The methods of administration of iodids were as follows:

1. The painting of the U. S. P. tincture of iodin on the shaven skin.

2. The administration, by mouth with the food, of a one to one aqueous solution of potassium iodid in doses ranging from 15 to 30 drops each day.

3. The subcutaneous injection of from 20 to 45 drops of a one to one solution of potassium iodid diluted to 5 c.c., one injection each day.

Three dogs of the entire number were used as controls and to these no iodids were given. The determination of the iodin content of the thyroids removed from the three control dogs was 2.58 mg. of iodin per gram weight

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of dried gland. Five dogs were painted with the tincture of iodin and the average iodin content of these glands was 6.5 mg. per gram weight of dried gland. Three dogs had subcutaneous injections of potassium iodid. The average iodin content of their glands was 5.53 mg. Four dogs were given potassium iodid with their food. The average iodin content of their glands was 2.73 mg.

TABLE 3.—SHOWING THE STORAGE POWER OF THE THYROID GLANDS OF DOGS REGARDING IODIN

No. of Dog	Treatment	No. of Treatments	Dose Given	Date of Removal	Amt. of Iodin in mg. per Gram
1	None	0	0	8/ 4/12	2.50
4	None	0	0	8/28/12	3.86
7	None	0	0	8/15/12	1.40
2	KI with food	5	45M	8/15/12	1.61
11	KI with food	10	30M	10/28/12	1.47
12	KI with food	14	35M	10/28/12	5.10
5	KI injected	7	15	8/28/12	5.30
8	KI injected	7	15	9/17/12	3.54
14	KI injected	16	30	11/20/12	7.86
3	Tr. iodin painted	5	4"x5"	8/15/12	5.57
6	Tr. iodin painted	7	4"x5"	8/28/12	5.43
9	Tr. iodin painted	7	4"x5"	9/16/12	7.66
10	Tr. iodin painted	11	4"x6"	10/28/12	3.64
13	Tr. iodin painted	16	8"x8"	11/20/12	10.18

It was noted from these methods of administration that the external application of the tincture of iodin caused the greatest average increase of the iodin content of the gland. It was further noted that the dogs, receiving the subcutaneous injection of the iodid lost weight very rapidly. While these dogs did not store up so much iodin in their thyroids as the dogs which were painted with the tincture, yet they seemed to experience a much greater systemic effect from the drug. When the potassium iodid was fed with the food, it caused very little increase in the iodin content.

Pathologists doing post-mortems often see the final picture in the most extreme cases of hyperthyroidism and it is from such cases and from a review of all the cases which have come to necropsy that three most constant conditions are encountered.

1. The extreme emaciation of all patients dying from hyperthyroidism is mentioned. That the iodids when given in large doses over a period of time do cause a great loss in body weight there is no doubt. The same therapeutic fact is taken advantage of by manufacturers of proprietary antifat remedies and preparations of thyroid are greatly used by them.

2. The general appearance which the intestinal tract presents is noted, i. e., the contracted intestines which have a congested appearance with the mesenteric vessels engorged with blood; such a condition may be produced by chronic poisoning with any of the metallic poisons. A similar condition has been noted in animals which we have sacrificed after chronic iodin poisoning.

3. The microscopic picture of a section of the liver. Almost invariably, the section shows fatty degeneration (lipoid changes) of various degree. This lipoid change of the liver is the result of some chronic intoxication. The question naturally arises, What is the nature of the poison producing it? It is well known that such fatty changes occur in many chronic diseases. Tuberculosis and chronic alcoholism might be cited as examples in which such a change frequently occurs. It has been known for many years that phosphorus will produce a lipoid change of the liver when given in toxic doses. Will iodin also produce such a lipoid change when so given? Cushny[4] says that iodin, like phosphorus, does produce a fatty degeneration (or lipoid change) in the liver and other organs. Further, he says that thyroid likewise produces a fatty degeneration in various organs when given in excessive doses to the point of poisoning.

A poison known as acetonitrile has been used by Hunt[5] as a measure to determine thyroid activity. He found that by feeding white mice with cracker cakes containing desiccated thyroid, their resistance to acetonitrile poisoning was increased.

Following Hunt's plan, I have carried out a series of experiments on white mice, feeding them with the desiccated thyroid of parenchymatous hypertrophic and hyperplastic and colloid glands removed at operation. Cracker cakes were used as a food for the controls and cracker cakes, to which the fresh desiccated glands were added, were used as a food for experiment. It was found that those mice which received the cracker cakes containing the desiccated parenchymatous hypertrophic and hyperplastic glands have a slightly greater resistance to acetonitrile than those mice which were fed on the plain cracker cakes. Those mice fed with cracker cakes to which the desiccated colloid goiters had been added had a higher resistance than either the controls or those fed with hyperplastic glands. In neither group was it possible to produce a resistance equal to that produced by Reid Hunt when he fed the desiccated commercial thyroid made from the sheep.

By painting the tails of the mice with tincture of iodin on three or four successive days, however, it was found that an increase in resistance to acetonitril poisoning was obtained equal to and, in many cases, greater than that obtained by feeding with desiccated thyroids. When the painting is carried beyond the seventh or eighth day, the degree of resistance becomes less positive due to the poisonous effects produced by the iodin.

Regarding chronic iodism in man, the United States Dispensatory[6] gives the following symptoms:

Even in medicinal doses, it sometimes causes alarming symptoms such as fever, restlessness, disturbed sleep, palpitations, excessive thirst, acute pain in the stomach, vomiting and purging, violent cramps, frequent pulse and, finally, progressive emaciation if the medicine be not laid aside. Absorption of the mamma and wasting of the testicle have been reported as caused by the long-continued use of the drug.

It will be noted that many of the symptoms present in chronic iodism correspond very closely to those of hyperthyroidism.

Clinical experience regarding the use of iodids in simple goiter demonstrates that there is a certain class of patients who often receive great benefit from the administration of the iodids in some form. On the contrary, cautious physicians empirically hesitate to prescribe large doses of the iodids to patients with severe cases of hyperthyroidism for fear of increasing the symptoms. It is a well-known fact that some individuals are very susceptible to the iodids. Berg[7] has reported several cases of patients receiving full doses of iodids, who rather suddenly developed the symptoms usually noted in hyperthyroidism. Physicians writing in the early part of the last century, who, in many things, were very close observers, recognized that there were cases of "bronchocele" that were made much worse by large doses of iodids. The following paragraph was written

4. Cushny: Pharmacology and Therapeutics.
5. Hunt: Hygienic Laboratory Bull. 69, June, 1910.
6. U. S. Dispensatory, Ed. 19, p. 667.
7. Berg: Deutsch. med. Wchnschr., 1911, xxxvii, 306.

before the time that the train of symptoms known to-day as hyperthyroidism was generally recognized:[8]

> After a few weeks' skilful administration of potassium iodid the external swelling will gradually disappear. Should the patient, while under a course of it, experience any considerable quickening of the pulse, a rapid loss of flesh, palpitation of the heart, a dry cough, restlessness and want of sleep and, in certain cases, with an increase of appetite for food, though the swelling shall undergo diminution, it will be necessary to intermit the medicine for some days and afterwards resume the use of it when the health and safety of the patient will permit.

On the hypothesis that the symptoms of hyperthyroidism are those produced by chronic iodism, how may the physiology of the thyroid be explained? It is possible that one of the functions of the thyroid is the control of iodin metabolism and that it bears a relation to iodin which might be compared to the relation of the liver with glycogen. There may be conditions under which the thyroid fails in its control of this iodin metabolism, and the continued intake of iodin into the system from natural sources, without its being metabolized, produces the chronic poisoning.

TABLE 4.—EXPERIMENTS ON MICE

Mouse Number	Method of Feeding	Number of Days Fed	Iodin Content of Substance Mixed with Cracker Cakes	Weight of Gland in Each Cracker Cake	Date of Test	Gram Weight of Mouse	Dose in milligrams Average Control	Dose per mg. gram of Mouse	Results: + died 0 lived
1a	Plain cracker cakes	20	Fed on plain cracker cakes.	Absent	8/ 5/12	20.6	6.66	0.32	0
2a	Plain cracker cakes	20	Fed on plain cracker cakes.	Absent	9/14/12	17.6	7.04	0.4	0
3a	Plain cracker cakes	20	Fed on plain cracker cakes.	Absent	9/14/12	16.6	8.30	0.5	0
4a	Plain cracker cakes	20	Fed on plain cracker cakes.	Absent	9/20/12	18.7	9.83	0.525	0
5a	Plain cracker cakes	20	Fed on plain cracker cakes.	Absent	9/20/12	17.0	9.35	0.55	0
6a	Plain cracker cakes	20	Fed on plain cracker cakes.	Absent	9/20/12	19.1	10.98	0.575	+
7a	Plain cracker cakes	20	Fed on plain cracker cakes.	Absent	9/14/12	17.4	10.44	0.6	+
8a	Plain cracker cakes	20	Fed on plain cracker cakes.	Absent	8/ 3/12	23.3	16.19	0.7	+
9a	Plain cracker cakes	18	Fed on plain cracker cakes.	Absent	8/17/12	15.7	9.42	0.6	+
10a	Plain cracker cakes	20	Fed on plain cracker cakes.	Absent	8/14/12	17.3	12.11	0.7	+
1b	Desiccated Exop. fed with crackers.	20	0.5 mg. of Iodin per gm. wt. of gland used. Gland taken from Class B. Ph&h.	0.3 gm. in each cracker fed. One cracker weighed 4 gm.	9/12/12	16.0	9.6	0.6	0
2b	Desiccated Exop. fed with crackers.	20	0.5 mg. of Iodin per gm. wt. of gland used. Gland taken from Class B. Ph&h.	0.3 gm. in each cracker fed. One cracker weighed 4 gm.	9/12/12	25.3	15.3	0.6	0
3b	Desiccated Exop. fed with crackers.	21	0.5 mg. of Iodin per gm. wt. of gland used. Gland taken from Class B. Ph&h.	0.3 gm. in each cracker fed. One cracker weighed 4 gm.	9/21/12	26.3	16.98	0.6	0
4b	Desiccated Exop. fed with crackers.	21	0.5 mg. of Iodin per gm. wt. of gland used. Gland taken from Class B. Ph&h.	0.3 gm. in each cracker fed. One cracker weighed 4 gm.	9/21/12	22.4	15.68	0.7	+
5b	Desiccated Exop. fed with crackers.	20	0.5 mg. of Iodin per gm. wt. of gland used. Gland taken from Class B. Ph&h.	0.3 gm. in each cracker fed. One cracker weighed 4 gm.	9/20/12	18.3	10.98	0.6	+
1c	Desiccated colloid Class H. Fed with crackers, cakes.	14	Average 1.5 mg.	0.3 gm. in each cracker fed.	9/16/12	21.9	15.33	0.7	0
2c	Desiccated colloid Class H. Fed with crackers, cakes.	20	Average 1.5 mg.	0.3 gm. in each cracker fed.	9/12/12	15.5	14.4	0.8	0
3c	Desiccated colloid Class H. Fed with crackers, cakes.	21	Average 1.5 mg.	0.3 gm. in each cracker fed.	9/21/12	21.3	19.17	0.9	+
4c	Desiccated colloid Class H. Fed with crackers, cakes.	20	Average 1.5 mg.	0.3 gm. in each cracker fed.	9/12/12	18.5	20.4	1.1	+
1dg	Painted with Tr. I.	4x	Fed on plain cracker cakes.	Absent	10/ 8/12	19.4	11.64	0.6	0
2dg	Painted with Tr. I.	4x	Fed on plain cracker cakes.	Absent	10/ 8/12	17.2	12.04	0.7	0
3dg	Painted with Tr. I.	4x	Fed on plain cracker cakes.	Absent	10/ 8/12	18.8	15.04	0.8	0
4dg	Painted with Tr. I.	4x	Fed on plain cracker cakes.	Absent	10/ 8/12	24.4	24.4	1.0	+
5dg	Painted with Tr. I.	4x	Fed on plain cracker cakes.	Absent	10/ 4/12	18.1	18.1	1.0	0
6dg	Control.	0	Fed on plain cracker cakes.	Control	10/ 4/12	20.0	10.0	0.5	+
7dg	Control.	0	Fed on plain cracker cakes.	Control	10/ 8/12	18.2	9.1	0.5	0
8dg	Control.	0	Fed on plain cracker cakes.	Control	10/ 8/12	20.4	12.24	0.6	+
9df	Painted with Tr. I.	8x	Fed on plain cracker cakes.	Absent	9/22/12	14.7	14.70	1.0	0
10df	Painted with Tr. I.	8x	Fed on plain cracker cakes.	Absent	9/22/12	17.7	31.86	1.8	0
11df	Control.	0	Fed on plain cracker cakes.	Control	9/22/12	15.2	12.16	0.8	+
12de	Control.	0	Fed on plain cracker cakes.	Control	9/27/12	21.1	12.66	0.6	+
13de	Control.	0	Fed on plain cracker cakes.	Control	9/27/12	13.6	10.88	0.8	+
14de	Painted with Tr. I.	7x	Fed on plain cracker cakes.	Absent	9/27/12	17.2	17.2	1.0	0
15de	Painted with Tr. I.	7x	Fed on plain cracker cakes.	Absent	9/27/12	15.1	15.23	1.0	0
16de	Painted with Tr. I.	7x	Fed on plain cracker cakes.	Absent	9/27/12	16.9	21.9	1.3	+
17de	Painted with Tr. I.	7x	Fed on plain cracker cakes.	Absent	9/27/12	14.0	28.0	2.0	+

That the thyroid does act as a storehouse to iodin has been demonstrated frequently. It seems possible that it is the iodin, which is not stored or metabolized by the thyroid, which produces the Basedow syndrome. It is more easily stored or metabolized when administered in the pure form than when given in a combined state. The activity of various desiccated thyroid preparations apparently depends on their iodin content. Both theoretically and practically they are the most active of the iodin preparations.

We continually receive from food and water and possibly air a certain amount of iodin in various forms. Seidell and Fenger[9] point out that in cattle, sheep and hogs there is a seasonal variation in the iodin content of the thyroid glands. Possibly such seasonal variations are from the food which they receive, their iodin content beginning to rise as soon as the pasture comes.

Kocher[10] has shown that patients suffering with Basedow's disease, when treated with iodids, excrete a larger proportion in the urine than do normal individ-

8. Medical Lexicon.

9. Seidell and Fenger: Jour. Biol. Chem., January, 1913, p. 517.
10. Kocher: Mitt. a. d. Grenz. d. Med. u. Chir., xlv, pp. 359-424.

uals. From this it may be inferred that they do not metabolize iodin to the extent the normal person does.

There are many things concerning the toxic goiter which we do not understand, but it may be possible that it is the faulty metabolism by the thyroid as much as the hypersecretion which acts in producing the symptoms known to-day as hyperthyroidism.

A COMPARATIVE STUDY OF THE EFFECTS ON BLOOD-PRESSURE OF THE EXTRACTS AND SERUMS OF EXOPHTHALMIC GOITER AND OF OTHER SUBSTANCES *

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When injected intravenously into laboratory animals, extracts of most tissues show the presence of one or more substances with some depressor action. Rabbits and cats have been used for these experiments, but the dog is the animal best adapted for the purpose. By using an arterial cannula direct records of blood-pressure are obtained by means of the mercury manometer and the kymograph. It is observed also that with certain substances a marked fall in blood-pressure occurs on the first injection, but on the administration of a second dose a few minutes later a remarkable tolerance is revealed. The action of peptone on the blood and blood-pressure has been the subject of physiologic investigation for years. This substance causes a marked fall in blood-pressure with a subsequent tolerance to the same dose when injected intravenously.

Howell,[1] Jordan and Eyster,[2] Dixon and Halliburton,[3] and others, working with pineal extracts, have shown a fall in blood-pressure followed by a less marked effect on the second injection. A rise in blood-pressure followed by tolerance has been shown for the hypophysis by Howell,[1] and Lewis, Miller and Matthews.[4] There have been various conflicting results with the intravenous injections of extracts of the thyroid gland. We can confirm the results of Gley,[5] Schönborn[6] and others that in proper dosage there is a primary fall in blood-pressure and a less marked effect on second injections of extracts of goiters.

Brodie,[7] in his work with horse-serum injected into cats, noted a fall in blood-pressure with a subsequent tolerance. He noted further that the animal is protected by this first dose against the action of similar substances. He does not state, however, what his control substances were. Gley and Cleret[8] found that in a series of six patients suffering from exophthalmic goiter the serums of two caused a marked fall in blood-pressure in dogs, and a second dose of the same serums had little or no effect.

On the other hand, while cholin may cause a marked fall in blood-pressure when injected intravenously, it does not produce a tolerance. Halliburton[9] has shown by chemical analysis that cholin is abundant in extracts from brain-tissue and is the depressor substance. This is probably the substance causing lowering in pressure in extracts of any tissue in which proteolytic changes may have occurred. We believe that if the extract of a tissue shows the presence of a depressor substance without tolerance following, the presence of proteolytic change should be suspected. It would seem also that this proteolytic change begins in the tissues very soon; thus nothing but fresh extracts should be used.

In our work with the above-mentioned substances and other extracts of tissue, we may have gone a step farther than other investigators in that we have used a number of different substances in the same animal. It seems that the action of an extract producing tolerance to subsequent injections is more or less specific. The administration of an extract of another sort of tissue is followed by all the phenomena peculiar to that substance, without regard to that which has been employed previously. This specificity of action is also shown most markedly in the action of peptone and also in the extracts containing cholin when administered before or after the extracts of tissues. Our protocols (Tables 1 to 10, inclusive) show the effect produced by these substances on the blood-pressure of the dog.

TECHNIC

Extracts and Solutions.—All extracts were made from fresh tissue, minced, ground with sand and mixed with physiologic salt solution, 1 c.c. for each gram of tissue. After macerating for an hour or so, the solution was filtered through glass wool. Control extracts from normal dog tissue were made immediately after killing a dog, the brain, thyroid, spleen, pancreas and testes being removed and prepared as described.

It was found that a potent dose of thyroid, especially if the tissue was hyperplastic, was 0.5 c.c. of extract (0.5 gm. of tissue) per kilogram. Peptone control was made in 10 per cent. solution and administered in the same dosage, 0.5 c.c. per kilogram. Various commercial extracts of thyroid were used as controls and found to possess less marked effect on blood-pressure than fresh extracts.

To obtain serum, the patient was bled into a flask of about 180 c.c. capacity, and on the following day, after contraction of the clot had taken place, the serum was separated. The dose of serum producing marked effect in suitable cases was found to be from 2.5 to 4 c.c. per kilogram.

Operative Procedures.—Dogs anesthetized with ether after a preliminary dose of morphin were used for our series of experiments. For securing a direct blood-pressure tracing on the long paper kymograph the left carotid was used; when the vagus was stimulated the nerve on the right side was used. The extracts and serums were injected with a syringe of suitable size into the right femoral vein. Half saturated magnesium sulphate and also the usual sodium carbonate and sodium bicarbonate solutions were used to prevent clotting. In our first experiments a transmitting tambour was used

* From the Mayo Clinic.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

* Because of lack of space, Tables 3, 7, 8, 9 and 10 with descriptions have been omitted. The complete article will be published in the Transactions of the Section and in the authors' reprints.

1. Howell: Jour. Exper. Med., 1898, iii, 245.
2. Jordan and Eyster: Am. Jour. Physiol., 1911, xxix, 115.
3. Dixon and Halliburton: Quart. Jour. Exper. Physiol., 1909, ii, 283.
4. Lewis, Dean; Miller, Joseph L., and Matthews, S. A.: The Effects on Blood-Pressure of Intravenous Injections of Extracts of the Various Anatomic Components of the Hypophysis, Arch. Int. Med., June, 1911, p. 785.
5. Gley: Jour. de physiol. et de path. gén., 1911, xiii, 955.
6. Schönborn: Arch. f. exper. Path. u. Pharmakol., 1909, lx, 390.
7. Brodie: Jour. Physiol., 1900-1901, xxvi, 48.
8. Gley and Cleret: Jour. de physiol. et de path. gén., 1911, xiii, 928.
9. Halliburton: Jour. Physiol., 1900-1901, xxvi, 229.

in producing tracings; later a float and the direct method were employed.

The accompanying tables give a complete record of all the experiments performed. Though there are a great many negative results, we feel that they may be of interest to others and that they should be published in detail.

DISCUSSION OF TABLES

The first experiment described in Table 1 shows the great drop in blood-pressure produced by a single injection of extract of hyperplastic thyroid. Table 1, No. 2, demonstrates the presence of an unusually potent depressor, as is also shown by the effect of the same extract in Table 5, No. 6. The tolerance produced by the first injection toward subsequent injections is shown in Table 1, No. 3. In general, it may be stated that this tolerance is most manifest when the first injection produces a marked reaction. Table 1, No. 5, shows good tolerance to fresh extracts after the first injection and also the typical action on both first and second injections of decomposed extracts. Atropin inhibits the action of cholin; that this drug has no effect on the action of the depressor in fresh extracts of hyperplastic thyroids is shown in Table 1, No. 6.

The series of experiments given in Table 2 is small, but at least two of the experiments are of interest. The same phenomenon may be noted in both No. 2 and No. 3; that is, tolerance produced by a good drop on the first injection of extract of hyperplastic thyroid, and the lack of any effect when serum from a patient having exophthalmic goiter is injected. The second extract injected in Table 2, No. 2, probably had undergone some proteolytic change. No. 3 also shows the action of a peptone solution and extract of carcinoma, with tolerance to second injections of each substance.

Four experiments in Table 3, Nos. 4, 5, 6 and 7, show no effect when extracts of non-hyperplastic goiters were injected after primary injections of extracts of goiters

TABLE 1.—INJECTIONS OF EXTRACTS OF HYPERPLASTIC

Dog No. Serial	Dog No. Kennel	Date	Wt. Kg.	B. P. mm. Hg	First Substance Injected	B. P. ½ Min. Later	Drop mm. Hg.	Interval Mins.	B. P. mm. Hg
1	245	5/17/12	10.5	150	Ext. hyperplast. thy., 6 c.c. (Case 61699)	70	80		
2	327	9/13/12	6.0	145	Ext. hyperplast. thy., 3 c.c. (Case 68830)†	60	85		
3	481	2/26/13	6.5	180	Ext. hyperplast. thy., 6 c.c. (Case 80439)	90	90	2	
				160	Ext. hyperplast. thy., 6 c.c. (Case 80439)	140	20		
4	370	11/11/12	7.0	110	Ext. hyperplast. thy., 5 c.c. (Case 70239)	107	3	35	103
				107	Ext. hyperplast. thy., 5 c.c. (Case 70239)	97	10	2	113
5	414	1/ 7/13	5.5	160	Ext. hyperplast. thy., 3 c.c. (Case 77976)	125	35	1	160
				153	Ext. hyperplast. thy., 3 c.c. (Case 77976)	146	7	3	...
6	480	2/26/13	8.0	155	Vagus active 1-50 grain atropin. Vagus blocked	...	..	..	155
7	384	12/ 9/12	4.7	175	Ext. hyperplast. thy., 2.5 c.c. (Case 70313)	70	75	20	...

* In these and the following experiments, when a second injection of a substance was made, the record appears immediately be
† Dog died. (See Table 5, No. 6, in which same substance was used.)

TABLE 2.—INJECTIONS OF EXTRACTS OF HYPERPLASTIC THYROIDS FOLLOWED

Dog No. Serial	Dog No. Kennel	Date	Wt. Kg.	B. P. mm. Hg	First Substance Injected	B. P. ½ Min. Later	Drop mm. Hg	Interval. Min.	B. P. mm. Hg	Second Substance Injected
1	285	7/ 3/12	7	102	Ext. hyperplast. thy., 3 c.c.	75	27	3	100	Ext. hyperplast. thy., 3 c.c.
						..	..	..	90	Ext. hyperplast. thy., 3 c.c.
2	274	7/19/12	13	120	Ext. hyperplast. thy., 5.5 c.c. (heated to 60 C.)	60	60	4	135	Exoph. serum, 30 c.c. (Case 70458)
				125	Ext. hyperplast. thy., 5.5 c.c. (heated to 60 C.)	125	..	5	...	
3	483	3/ 4/13	11	130	Ext. hyperplast. thy., 5.5 c.c.	62	68	4	130	Exoph. serum, 28 c.c. (Case
				128	(Case 80707) Ext. hyperplast. thy., 5.5 c.c. (Case 80707)	128	..	5	...	86699)

TABLE 4.—INJECTIONS OF SERUMS FROM EXOPHTHALMIC GOITER PATIENTS

Dog No. Serial	Dog No. Kennel	Date	Wt. Kg.	B. P. mm. Hg	First Substance Injected	B. P. ½ Min. Later	Drop mm. Hg	Interval Mins.
1	192	6/ 6/12	9.5	125	Exoph. serum, 21 c.c. (Case 68628)	50	75	9
2	262	6/24/12	6.6	100	Exoph. serum, 21 c.c. (Case 68628)	80	20	..
3	333	9/ 7/12	9.0	125	Exoph. serum, 21 c.c. (Case 69347)	115	10	..
4	457	2/ 8/13	11.0	130	Exoph. serum, 30 c.c. (Case 59547)	130	..	..
				95	Exoph. serum*			

* Dog died at once. Injection into external jugular.

V. 62 1914

with hyperplasia. Iodothyrin was used twice in this series (Nos. 2 and 3) as a control substance, with no effect. No. 8 illustrates well the action of extract of brain. This is probably a cholin action; the comparison between this action and that of decomposed extracts is striking (see Table 1, No. 5). The tolerance toward the pressor substance on second injections of pituitary extract, shown in Table 3, No. 9, is characteristic of this extract.

The effects of injecting serum from patients with different degrees of intoxication has been made the subject of a separate study and is reported elsewhere.[10] The patients from whom serum was used (Table 4, No. 1, Table 5, Nos. 1 and 2, and Table 6, Nos. 2 and 4), were all acutely toxic from exophthalmic goiter. The rest were not at or near the height of their intoxication. The apparent tolerance for extracts of hyperplastic goiters, produced by first injecting serum from patients having exophthalmic goiter, is seen in Table 5, Nos. 1, 2 and 4. We should expect a greater drop in blood-pressure here, as the extracts were made from typical hyperplastic goiters. Table 4, No. 4, is also worthy of note as concerns the last substance used. This extract, eight days old, gave a remarkable rise in blood-pressure each time it was injected. It is evident from Table 5, No. 7, that eight hours is sufficient time in which to produce marked change in the character of an extract.

Table 6 requires but little comment. The great effect of injecting serum in No. 2 had no effect on the subsequent action of an extract of prostate. No. 7 also shows the marked depressor action of extracts of this tissue. Atropin has no effect on the action of peptone (No. 10), but does inhibit the action of a decomposed extract in the same experiment.

The six experiments in Table 7 show, on first injection, the presence of a depressor substance in non-hyperplastic goiters (adenomas) somewhat similar in action to that of extracts of goiters with hyperplasia. That there is at least great difference in dosage is brought out in No. 4, in which experiment there was a fall of 30 mm., when an extract of hyperplastic goiter was injected after tolerance was established to extracts of adenomas. The action of extract of sarcoma after extract of goiter (No. 5) should be noted and that of extract of carcinoma of the breast after cutting both vagi (No. 2).

Of Table 8 very little is to be said regarding the three experiments in which serum from patients with simple, non-hyperplastic goiter was injected first. The second experiment in this series shows the more marked effect of serum from patients having exophthalmic goiter, also an apparent tolerance produced thereby for extract of hyperplastic goiter. The cause of death in No. 3 is unexplained.

The experiments in Table 9 add little to our knowledge, but the marked action of the extracts of exophthalmic goiter is emphasized in comparison with the control substances in the first three experiments, and No. 4 is of interest because of the action of the serum after the large drop and tolerance from extract of sarcoma.

The last large group of experiments, given in Table 10, shows the action of various control substances. Nos.

THYROIDS FROM EXOPHTHALMIC GOITER PATIENTS*

Second Substance Injected	B. P. ½ Min. Later	Drop mm. Hg	Interval, Min.	B. P. mm. Hg	Third Substance Injected	B. P. ½ Min. Later	Drop mm. Hg
Ext. hyperplast. thy., 5 c.c. (Case 68607)	93	10	..	...			
Ext. hyperplast. thy., 5 c.c. (Case 68607)	90	23	..	...			
Ext. hyperplast. thy., 6 c.c. (Case 77985)	150	10	1	150	Ext. hyperplast. thy., 3 c.c. (decomposed)	105	45
				160	Ext. hyperplast. thy., 3 c.c. (decomposed)	120	40
Ext. hyperplast. thy., 7 c.c. (Case 80439)	100	55	..	...			
1-50 grain atropin sulphate	...	..	..	87	Ext. hyperplast. thy., 5 c.c. (Case 70313)	65	22
	...	..	..	97	Ext. hyperplast. thy., 5 c.c. (Case 70313)	70	27

low that of the first injection of the same substance.

BY INJECTIONS OF SERUMS FROM EXOPHTHALMIC GOITER PATIENTS

B. P. ½ Min. later	Drop mm. Hg	Interval, Min.	B. P. mm. Hg	Third Substance Injected	B. P. ½ Min. Later	Drop mm. Hg	Interval, Min.	B. P. mm. Hg	Fourth Substance Injected	B. P. ½ Min. Later	Drop mm. Hg	Interval, Min.
90	10	1	92	Exoph. serum, 15 c.c. (Case 71036)	85	7	2	110	Peptone, 10 per cent., 10 c.c.	35	75	8
90	..	3	100	Exoph. serum, 21 c.c. (Case 71036)	80	20	5	48	Peptone, 10 per cent., 10 c.c.	45	3	..
135	..	10	140	Ext. hyperplast. thy., 5 c.c.	90	50	..	...				
...	..	..	130	Ext. hyperplast. thy., 5 c.c.	99	40	..	...				
120	10	5	130	Peptone, 10 per cent., 5.5 c.c.	84	46	4	128	Ext. Ca. breast, 5.5 c.c. (Case 80779)	108	20	
...	..	..	138	Peptone, 10 per cent., 5.5 c.c.	116	22	4	128	Ext. Ca. breast, 5.5 c.c. (Case 80779)	128		

10. Blackford, J. M., and Sanford, A. H.: Med. Rec., 1913.

7, 8, 9 and 10 have been grouped together because extracts of thyroids from dogs were injected. The results were not constant, however. Peptone was the only substance used in No. 11. Tolerance was established to the first dose. When three times this amount was administered there was a large drop, with tolerance to another injection of the same quantity. The strange preliminary rise of the blood-pressure, followed by a fall, caused by extracts of spleen, occurred in only the three experiments, Nos. 15, 16 and 17.

While a study of the individual experiments shows many exceptions, our general findings are stated in the summary.

SUMMARY

1. Extracts of exophthalmic goiters cause a very marked fall in the blood-pressure of the dog, with

TABLE 5.—INJECTIONS OF SERUMS FROM EXOPHTHALMIC GOITER

Dog No. Serial	Dog No. Kennel	Date	Wt. Kg.	B. P. mm. Hg	First Substance Injected	B. P. ½ Min. Later	Drop mm. Hg	Interval, Min.	B. P. mm. Hg	Second Substance Injected
1	259	6/19/12	9.8	110	Exoph. serum, 31 c.c. (Case 69198)	75	35	5	120	Ext. hyperplast. thy., 5 c.c.
				130	Exoph. serum, 31 c.c. (Case 69198)	120	10	2	115	Ext. hyperplas. thy., 10 c.c.
2	361	11/ 1/12	7.0	129	Exoph. serum, 8 c.c. (Case 75496)	95	34	5	150	Ext. hyperplast. thy., 3.5 c.c. (Case 69368)
									120	Ext. hyperplast. thy., 10.5 c.c. (Case 69368)
3	381	12/ 3/12	7.5	160	Exoph. serum, 30 c.c.	135	25	3	165	Ext. hyperplast. thy., 4 c.c. (Case 48043)
									145	Ext. hyperplast. thy., 4 c.c. (Case 48043)
4	342	9/21/12	5.5	164	Exoph. serum, 4 c.c. (Case 73529)	145	21	7	132	Exoph. serum, 4 c.c. (Case 73551)
				138	Exoph. serum, 4 c.c. (Case 73529)	128	10	2	...	
5	270	7/ 9/12	7.2	150	Exoph. serum, 25 c.c. (Case 70119)	135	15	3	150	Ext. hyperplast. thy., 3.5 c.c.
				150	Exoph. serum, 25 c.c. (Case 70119)	135	15	4	140	Ext. hyperplast. thy., 12 c.c.
6	326	9/13/12	10.0	140	Exoph. serum, 21 c.c.	130	10	2	140	Ext. hyperplast. thy. (Case 68830)
7	338	9/18/12	7.3	120	Exoph. serum, 21 c.c. (Case 73673)	125	..	5	155	Ext. hyperplast. thy., 3.5 c.c. (8 hours old)
						...	..	..	130	Ext. hyperplast. thy., 3.5 c.c. (8 hours old)
8	284	7/12/12	7.0	80	Exoph. serum, 45 c.c. (Case 71431)	75	5	2	85	Ext. hyperplast. thy., 5 c.c. (heated) (Case 70927)
						...	..	..	85	Ext. hyperplast. thy., 5 c.c. (heated) (Case 70927)
9	311	9/ 4/12	7.6	115	Exoph. serum, 30 c.c.	113	2	1	108	Ext. hyperplast. thy., 7 c.c. (heated) (Case 58086)
				118	Exoph. serum, 30 c.c.	117	1	5	100	Ext. hyperplast. thy., 12 c.c. (heated) (Case 58086)
10	385	12/11/12	12.0	150	Exoph. serum, 50 c.c. (Case 76590)	150	..	1	150	Ext. hyperplast. thy., 6 c.c. (Case 76597). After 1-50 grain atropin
						...	..	..	130	Ext. hyperplast. thy., 12 c.c. (Case 76597). After 1-50 grain atropin

* 24 mm. rise. † 35 mm. rise.

TABLE 6.—INJECTIONS OF SERUMS FROM EXOPHTHALMIC GOITER

Dog No. Serial	Dog No. Kennel	Date	Wt. Kg.	B. P. mm. Hg	First Substance Injected	B. P. ½ Min. Later	Drop mm. Hg	Interval, Min.	B. P. mm. Hg	Second Substance Injected
1	236	5/14/12	12.7	160	Exoph. serum, 40 c.c.	140	20	5	160	Fluid cystic adn., 5 c.c. (Case 67217)
2	249	5/20/12	9.55	135	Exoph. serum, 30 c.c. (Case 67993)	60	75	26	130	Ext. prostate, 5 c.c. (Case 67221)
				140	Exoph. serum, 16 c.c. (Case 67993)	105	35	13	...	
3	253	6/ 9/12	12.5	145	Exoph. serum, 23 c.c. (Case 68883)	115	30	3	135	Exoph. serum, 20 c.c. (Case 68720)
				135	Exoph. serum, 23 c.c. (Case 68883)	125	10	3	...	
4	264	6/25/12	5.8	110	Exoph. serum, 35 c.c.	40	70	12	105	Ext. mult. adn., 3 c.c.
						105	..	..	105	Ext. mult. adn., 5.5 c.c.
5	260	6/21/12	8.2	145	Exoph. serum, 21 c.c. (Case 69368)	135	10	1	145	Exoph. serum, 21 c.c. (Case 69364)
				145	Exoph. serum, 21 c.c. (Case 69368)	135	10	10	...	
6	271	7/ 2/12	9.0	135	Exoph. serum, 12.5 c.c.	125	10	1	135	Ext. toxic adn. serum, 12 c.c. (Case 69732)
				130	Exoph. serum, 12.5 c.c.	125	5	5	...	
7	237	5/ 1/12	15.0	120	Exoph. serum, 40 c.c. (Case 67250)	135	..	5	130	Ext. prostate, 6 c.c. (Case 66158)
8	289	8/19/12	5.0	105	Exoph. serum, 18 c.c. (Case 71129)	110	..	3	95	Peptone, 10 per cent., 5 c.c.
				110	Exoph. serum, 18 c.c. (Case 71129)	100	10	2	110	Peptone, 10 per cent., 5 c.c.
9	479	2/21/13	5.0	100	Exoph. serum (Case 80949)	90	10	30	120	Ext. Ca. breast, 5 c.c.
						...	..	..	120	Ext. Ca. breast, 5 c.c.
10	484	2/28/13	7.0	140	Exoph. serum, 20 c.c. (Case 80560)	110	30	5	...	1-50 grain atropin, Rt. vagus blocked

V. 6
1914

splanchnic dilatation and slowing of the pulse. The first injection produces tolerance toward subsequent injections. Atropin does not affect the action.

2. The serum of patients at the height of intoxication from acute exophthalmic goiter causes a marked fall in blood-pressure; tolerance is produced.

3. The only subtsances we have used that produce comparable drops in blood-pressure with tolerance are Witte's peptone (10 per cent. solution) and extracts of sarcoma and hypertrophied prostates.

4. Brain extracts and extracts of decomposing tissue containing cholin produce very different drops in that there is no tolerance produced, and atropin inhibits their action.

5. The tolerance produced to extracts of sarcoma and prostate or peptone solutions does not protect the ani-

PATIENTS FOLLOWED BY INJECTIONS OF EXTRACTS OF HYPERPLASTIC THYROIDS

B. P. ½ Min. Later	Drop mm. Hg	Interval, Min.	B. P. mm. Hg	Third Substance Injected	B. P. ½ Min. Later	Drop mm. Hg	Interval, Min.	B. P. mm. Hg	Fourth Substance Injected	B. P. ½ Min. Later	Drop mm. Hg
115	5	3	115	Ext. hyperplast. thy., 5 c.c. (decomposed)	70	45	3	...			
110	5	4	100	Ext. hyperplast. thy., 5 c.c. (decomposed)	70	30	..	...			
140	10	13	...								
98	22	..	...								
100	65	2	140	Peptone, 10 per cent., 3 c.c.	100	40	3	...			
132	13	8	130	Peptone, 10 per cent., 3 c.c.	115	15	..	...			
126	6	2	130	Ext. hyperplast. thy., 3 c.c. (Case 69776)	120	10	..	128	Ext. hyperplast. thy., 3 c.c. (8 days old)	152	*
...	..	..	122	Ext. hyperplast. thy., 3 c.c. (Case 69776)	128	..	1	155	Ext. hyperplast. thy., 3 c.c. (8 days old)	190	†
155	15	4	...								
130	10	..	...								
60	80	..	...	Dog died							
100	55	2	120	Ext. hyperplast. thy., 9 c.c. (8 hours old)	75	45	..	...			
100	30	2	135	Ext. hyperplast. thy., 7 c.c. (8 hours old)	85	50	..	...			
85	..	2	85	Ext. hyperplast. thy., 5 c.c. (heated) (Case 71425)	85	..	..	85	Peptone, 10 per cent., 10 c.c.	35	50
85	..	1	85	Ext. hyperplast. thy., 5 c.c. (heated) (Case 71425)	85	..	..	62	Peptone, 10 per cent., 10 c.c.	45	17
85	15	2	105	Ext. hyperplast. thy., 5 c.c. (decomposed)	80	25	2	...			
100	..	2	105	Ext. hyperplast. thy., 5 c.c. (decomposed)	75	30	..	...			
108	42	..	...								
72	58	..	...								

PATIENTS FOLLOWED BY INJECTIONS OF VARIOUS CONTROL SUBSTANCES

B. P. ½ Min. Later	Drop mm. Hg	Interval, Min.	B. P. mm. Hg	Third Substance Injected	B. P. ½ Min. Later	Drop mm. Hg	Interval, Min.	B. P. mm. Hg	Fourth Substance Injected	B. P. ½ Min. Later	Drop mm. Hg
150	10	12	140	Ext. adn., 4 c.c. (Case 32031)	140	..	..	...			
70	60	14	120	Ext. mult. adn., 12 c.c.	90	30	..	...			
...	..	..	120	Ext. mult. adn., 12 c.c.	115	5	..	...			
135	..	3	120	Ext. coll. adn. (Case 68352)	115	5	2	110	Ext. coll. adn., 7 c.c. (Case 68572)	120	10
105	..	1	...								
100	5	..	...								
135	10	1	150	Ext. coll. adn., 7 c.c.	105	45	3	135	Ext. hyperplast. thy., 2.5 c.c. (Case 69116)	120	15
135	..	7	120	Ext. hyperplast. thy., 4.5 c.c.	115	5	..	...			
65	75	..	...								
55	40	5	105	Ext. hyperplast. thy., 2.5 c.c., heated (Case 67913)	95	10	2	...			
95	15	5	95	Ext. hyperplast. thy., 2.5 c.c. heated (Case 67913)	105	..	..	...			
105	15	1	...								
120	..	..	...								
...	..	2	140	Peptone, 10 per cent., 3 c.c.	70	70	3	150	Ext. hyperplast. thy., 3 c.c. (two days old)	146	4
...	..	..	142	Peptone, 10 per cent., 3 c.c.	136	6	5	...			

mal from the typical action of the extracts of exophthalmic goiter.

6. The tolerance of the serum of exophthalmic goiter apparently protects the animal against the action of the extracts of exophthalmic goiter.

CONCLUSION

There is a powerful depressor substance in saline extracts of exophthalmic goiters, and apparently the same substance is present in the blood of individuals suffering acutely from this disease.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. WILSON, SMITH, SANFORD AND BLACKFORD

DR. E. T. BELL, Minneapolis: I should like to ask Dr. Wilson to explain his grouping of the toxic cases.

DR. A. W. HEWLETT, Ann Arbor, Mich.: Was the fall in blood-pressure from exophthalmic serum prevented by a previous injection of exophthalmic extract?

DR. A. H. SANFORD, Rochester, Minn.: Apparently tolerance to the depressor substance in an extract of exophthalmic goiter would prevent the fall in blood-pressure from a potent serum of an exophthalmic goiter patient. I use the word "potent" because only in the acute stage of intoxication is a depressor substance obtained. We have used altogether about twenty-six serums and about forty-nine extracts. Some of these serums were from patients with simple goiter. These serums contained no potent depressor substance. We also used serums from normal persons and from the horse. We found no drops in normal serums.

DR. A. W. HEWLETT, Ann Arbor, Mich.: We have injected the serums from patients with high blood-pressure into dogs and rabbits and in these cases there was a striking fall in blood-pressure. We were under the impression that this fall might occur after injections of normal serums.

DR. L. B. WILSON, Rochester, Minn.: The grouping into toxic non-exophthalmic and into toxic exophthalmic cases is purely clinical. It is found that the exophthalmic toxic cases invariably show hypertrophy and hyperplasia, while the non-exophthalmic cases do not show these symptoms.

DR. A. H. SANFORD, Rochester, Minn.: There was a fall in blood-pressure even after both vagi were cut. Furthermore, Gley and Cleret in their series stated that there is inhibition of vagus action after the injection of the serums and goiter extracts. We could not demonstrate this. By the use of the intestinal plethysmograph we were able to demonstrate that a marked splanchnic dilatation occurred coincident with this fall in blood-pressure. We injected these serums as we obtained them from patients without noting their histories. Sometimes we obtained marked fall in blood-pressure and at other times nothing at all. We did not know beforehand what our results would be. In reviewing the case histories it was found that the serums in which we had a marked fall in blood-pressure were from those patients who had acute intoxication from exophthalmic goiter and that those from which no effect was obtained were from the chronic cases. It appeared to us quite significant as to the amount of depressor substance present in the blood of these patients at that particular time.

Rural Sanitation.—In many states the large cities are the only points which have any real sanitary protection. Our rural population of 49,000,000 people, including the 30,000,000 who live on farms, with the exception of those fortunate rural dwellers in one or two exceptional states which regard the health of the country people as also important, receive very little state health protection and maintain no local protective system of their own against contaminated local milk, meat, shell-fish, fish or vegetables. Moreover, only a small number of these rural inhabitants are safeguarded, by competent inspection, against polluted water-supply or sewage-disposal methods dangerous to health and life.—Carl L. Alsberg, *Am. Jour. Pub. Health.*

FIELD-WORK IN TUBERCULOSIS*

MARY E. LAPHAM, M.D.
HIGHLANDS, N. C.

It is small comfort to a man dying of tuberculosis to be told that, if the disease had been discovered in time and properly treated, his life might have been saved. It is more than doubtful if the frequency of this failure to discover the disease in time is adequately appreciated outside a sanatorium. There we learn with appalling emphasis the lesson taught by experience that death in tuberculosis is not entirely due to an infection by tubercle bacilli, but equally, and possibly more than equally, due to failure to detect the beginnings of pathologic processes. The fault is not altogether in the inability or the neglect of physicians, because only too often the patient is all unconscious of the danger and does not seek help. It is to emphasize the importance of educating the people to a sense of this danger that this paper is written.

These cases of delayed diagnosis in which the patients do not seek a doctor until it is too late are due to lack of manifestations, so that the patient is not aroused in any way to the fact that there is any trouble in his lungs. He does not cough, has no fever, feels well, looks well and does his day's work with ease. We have at the Highlands Camp Sanatorium under our care patients who, up to the very time that they finally felt ill enough to call in a doctor, were feeling as well and working as well as they ever had. How shall we teach our people to realize that apparently good health is no guarantee against tuberculosis and that good working capacity is perfectly compatible with bad lungs? How can we make them appreciate the dangers of tuberculosis among apparently well people and the desirability of guarding against its spread and development by periodic examinations? How can we explain the long years of preparation and teach them that the victims discovered to-day have been years in the making, and that, therefore, the time to attack tuberculosis is not at the end, when it is perforce discovered, but during those long years of slow development when the crops were growing?

The recent work done in the South against the hookworm with such splendid results suggests the desirability of employing just such tactics against tuberculosis. In the South our people did not know why they could not work or that they had hookworms or that they could be cured. They had no hope of help and rarely sought it. By going out into the field and searching out these cases and teaching the people and the physicians on the spot an incredible amount of working capacity has been acquired for the South and this saving will steadily increase while the expenses of the campaign will lessen and cease. In the ordinary course of events how long would it have taken for this knowledge to filter down through to physicians and patients?

If another Rockefeller would establish a fund for field-work in tuberculosis so that we could plan the campaign along the same lines as that against the hookworm and put a tuberculosis expert in charge of each district, what should we hope to accomplish? First, we should want to educate the people so that they would understand the problems connected with the prevention of the disease; and, second, we should make a thorough canvass in order to learn how many cases of unsuspected latent tuberculosis were insidiously preparing to become manifest.

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* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

V. 6
1914

The district physicians will make a thorough search for suspicious cases and bring them for examination on the appointed day by the expert. This will teach the profession the most reliable and newest methods of examination and enable them to learn to detect the presence of a tuberculous process long before there are any manifestations. The expert will insist on the examination of apparently well children because he knows that it is precisely among these seemingly well children that concealed tuberculosis is found, and that if these cases are put under proper treatment many an adult will be saved. The expert will teach his physicians the necessity for distinguishing between an infection by tubercle bacilli and tuberculosis, because whereas over 90 per cent. of our children are infected by tubercle bacilli by the time they reach maturity, only a very small percentage manifest the disease and it is therefore evident that not all these infections develop into a tuberculous process. We can detect the unsuspected presence of tubercle bacilli by a tuberculin test, but this may be simply a biologic and not a pathologic reaction. The ability to react to tuberculin increases with each year of life from birth to maturity, so that we as constantly find an increase in the number of infections by tubercle bacilli, but this does not mean that the manifest cases of tuberculosis increase in the same proportion.

From birth to maturity there is an ever-increasing disproportion between the percentage of tuberculin reactions, the manifested cases of tuberculosis and the death-rate. We cannot tell by a tuberculin test whether or not a new-born babe has a tuberculosis infection because the ability to respond to tuberculin is still undeveloped.

With every year of life we find an increase in the number of children responding to tuberculin and we have argued from this increase a corresponding increase in the number of infections. This inference may be wrong in some cases because instead of a new infection we may have simply a newly developed ability to respond. Every day the study of the newly born and of the prematurely born is showing with ever-increasing frequency the presence of acid-fast bacilli or their prebacillary forms known as Much's granules in the blood and tissues when there was absolutely nothing to suggest their presence. The latency of the infections is so great that we are beginning to believe that they are as universal and as harmless as those by colon bacilli.

It is possible that the story of tuberculosis begins at birth and that the growing organism has to decide at the very start the question of its relations with this infection. If it is able to assert a phylogenetic ability to retain acid-fast infections in a state of harmless residence, as we all do colon bacilli, then tubercle bacilli are not dangerous to that individual. If there is a flaw in this mechanism, if the adaptation is not complete, the manifestation of this flaw will depend on an infinitude of factors. If the failure is conspicuous, the newly born will manifest it and die. One per cent. of all our children manifest this failure during the first year of life and die, not because they have been exposed, but because they have failed to adapt themselves. These failures inevitably die because they have never established the ability to live and the proportion between the number of manifest cases and the deaths is 100 per cent. The proportion of the death-rate to the total number of children is 1 per cent., and the percentage of infections is the same. Even in the second year of life discrepancy appears between the percentage of tuberculin reactions, the manifest cases and the death-rate, because no distinction is made between the tuberculin reactions and the manifest cases.

We argue from the increased number of reactions an increase in the number of infections and because the death-rate does not correspondingly increase it falls in proportion. If we should carefully distinguish between these tuberculin reactions and the evident manifest cases we might find that the death-rate was the same for these as in the first year of life and that the discrepancy was solely due to an increased ability to respond to tuberculin. That this is true is supported by the fact that acid-fast bacilli and Much's granules are found in infants that do not respond to tuberculin until later. With each year this discrepancy becomes greater until at maturity we find over 90 per cent. of tuberculin reactions and a death-rate of only 2 per cent. These figures will not reveal their true significance until a careful estimate is made of the distinction between manifest cases and biologic reactions. It may be that we shall find the actual death-rate higher at maturity than at any other period of childhood because of the ever-developing slowly manifested inability to live in safety with tubercle bacilli. It may be that the child that dies at 14 does not die because of a new infection but because the disparity between the danger from the infection and the ability to resist it increases. If this proves true, the tuberculosis work in the future must be directed toward detecting the children threatened with this failure and endeavoring to correct it. Prophylaxis will consist in preventing the development of this flaw and never allowing it to go on to the tuberculosis of adults.

To be able to distinguish between pathologic and biologic reactions our experts will need a well-equipped laboratory and Roentgen apparatus. This will mean great diagnostic skill and a great deal of work with consequent need of assistance. This will give our recent graduates a splendid opportunity to learn the most difficult task of distinguishing between a simple presence of tubercle bacilli and their assumption of pathogenic qualities. The keeping of these records and their comparison with the subsequent histories will teach us more concerning the relationship of these childhood infections with the tuberculosis of adults than we could possibly learn in any other way. We know that primary infection of the adult is impossible, but we do not know the history of these years between the primary infection and its final manifestation. By periodic examinations of our patients we can reveal these connections and study the effect of saving the child on the future death-rate from tuberculosis. This great effort cannot be forced on the people by the profession and they must therefore be taught to demand it, and to see that their future safety depends on it. The expense seems prohibitive, but we may come to realize that the money has to be spent anyway, and that it is only a question of when and how—whether we shall build and maintain sanatoriums for manifest cases and be utterly unequal to the problem of caring for them all, or whether preventoriums will not save years of wasted educational and living expenses lost at the very time the expense was to be justified.

The campaign of education will be greatly furthered by the stimulus to the comprehension of the people from the practical work carried on among them. Explanatory of these results, they will understand pathologic sections of lungs made during all stages of the disease, from the tissues swarming with the bacilli and yet not in the least injured, to the rotten lungs reeking with corruption.

Lectures illustrating the slow development of these processes in apparently well people and their compatibility with good health and working capacity will stimulate a desire for protection against this danger so subtle that

it cannot possibly be appreciated. Above all else, the length of time should be emphasized, because there is a strong belief that an infection by tubercle bacilli resembles other infections, such as typhoid, and that recovery is, therefore, comparable to that from typhoid. If the people could be made to understand the nature of recovery in tuberculosis there would be fewer deaths from idiotic impatience. In our schools the teachers and pupils can be easily taught the whole story of tuberculosis as soon as the knowledge is sufficiently diffused to furnish us with teachers. How else can this be done as quickly as by field-work done just as it was against the hookworm?

We guard our schoolchildren from infection in every way we can, but there are two sources of infection that do not sufficiently attract our attention. One source is in the unsuspected carriers of tubercle bacilli that during a lifetime cough a little, or have "winter colds" or "chronic bronchitis," but whose general health and appearance do not suggest tuberculosis. One man complacently told me when he brought his wife that he had lost two wives from tuberculosis and probably he would lose this one, which he did. This man was the unsuspected carrier of tubercle bacilli. A few months ago the mother of one of my patients died at 68 and tubercle bacilli were found just shortly before her death, but not until after two of her children had died from tuberculosis. We distinguish between the danger from cases with tubercle bacilli in the sputum and those without. In many cases the prebacillary forms of Much's granules are present when the adult bacilli are not and their virulence is equally great, if not greater, so that the distinction between an open and a closed case must be changed to sputum containing no Much's granules and not capable of causing tuberculosis in a guinea-pig by inoculation.

Prophylaxis in the future must consist in preventing the development of a universal infection common to all mankind, which can in no way be avoided and only restrained. The direct transmission from case to case is entirely inadequate to account for this universal infection and we must seek some other explanation. We know that throughout the grasses and among trees and with the lower cold-blooded animals such as snakes, fish, turtles and lizards, and with the higher animals, such as birds, poultry, cats, dogs, sheep, pigs and cows, each class has its own peculiar kind of acid-fast bacilli capable of producing tubercles and manifesting their genetic relationship to each other by tuberculin reactions. That these tubercle-producing acid-fast bacilli are universally present throughout Nature and that they all belong to the same family is unquestioned, and that changes in type can be induced by changes in the host is indisputably proved.

Starting with these undoubted facts, it may be eventually proved that the universal infection of the human race by acid-fast bacilli is comparable with its universal infection by colon bacilli and that the danger essentially consists in the assumption of pathogenic qualities. As a rule the human race has acquired the ability to restrain this assumption, but occasionally in a very small percentage of cases this ability cannot be established and tuberculosis results. The detection of this change at the earliest possible moment and its conversion into safety is the fundamental basis of our future efforts against the spread of tuberculosis. Periodic examinations of our schoolchildren would do much to reduce the tuberculosis of adults.

Highlands Camp Sanatorium.

ABSTRACT OF DISCUSSION

DR. ROSINA WISTEIN, Chicago: I do not agree with Dr. Lapham that the education of the public must come from the laity, and not from the medical profession. The laity are ignorant of the dangers that are confronting them; and I believe that it is the duty of the medical profession to teach others, and only in proportion as we are interested can we hope to interest others. I find the greatest indifference and carelessness not on the part of the laymen, but on the part of the medical practitioner.

SEVERANCE BURRAGE, PH.D., Indianapolis: I have met all kinds of people in this antituberculosis work, and I wish to corroborate what has been said in regard to the inactivity and careless attitude of physicians in general. In Indiana we are organizing the whole state in an antituberculosis campaign. We are organizing a local society in each county to carry on a campaign of education and disease prevention in that county. We find that the women are the best workers in most of these organizations, and that the physicians are really the hardest ones to induce to do active work. Some of them seem to feel that if they take an active part in a campaign for a local hospital — tuberculosis hospital — it will give the appearance of local advertisements or create certain jealousies among the physicians that will be undesirable, and will be looked on, possibly, as unethical or outside the pale of the physician's etiquette. For that reason we have found it difficult in many cases to enlist the active interest of physicians in the antituberculosis work. Some of the best workers are schoolteachers. They have a great deal of teaching to do, anyway; and just as schoolteachers are oftentimes enlisted in the Sunday-school work and in other kinds of teaching, they are also enlisted in this work. It does not seem right to me; I think that in a community in which facts in regard to disease—causes of disease and disease prevention—are concerned that the physicians should be the leaders in this educational campaign. They are the ones to whom the public should look for accurate information on these subjects; and yet, as I have stated, we find in the majority of cases that active workers among the physicians are hard to find.

DR. C. C. BROWNING, Los Angeles: I believe that the plan of fieldwork which the doctor has mapped out is worthy of more than passing notice. On account of my connection with the state tuberculosis commission of California, I have had occasion within the last two years to consider this subject somewhat carefully. We have adopted in our report a scheme founded on the campaign against the hookworm in the South. Our recommendation is the division of the state into sanitary districts, each of which is to be presided over by a dispensary physician, aided by a corps of nurses, for the express purpose of the detection of tuberculous patients. I believe that this plan promises the greatest amount of good in the future for the amount of money expended.

DR. W. A. EVANS, Chicago: There is, I think, a general consensus of opinion that tuberculosis in the cities is on the decline. Among the older cities—cities along the Atlantic seaboard—and the cities of continental Europe, the decline is about 50 per cent. in round figures. In our section of the country—in the Middle West—the decline is about 25 per cent. Our campaigns were not inaugurated so early as were the campaigns to the east of us, and probably they have not been so effectively conducted. It seems to me that the teaching of these experiences is quite conclusive that in communities that have undertaken this work thoroughly results follow, and that we are justified in concluding that tuberculosis will respond to efforts at its control. There are probably some states in which there is a decline in tuberculosis outside of the cities; but in the main, I think, the statement is true that there is—aside from the increasing amount of discovered tuberculosis—an actually increasing amount of tuberculosis in the rural districts.

The work for the control of tuberculosis in the rural districts is not so well developed as in the cities. I know of the plans that are being pursued in various cities in the vicinity of Chicago. It has seemed to me that the best of those plans was that in operation in Wisconsin. In Illinois the women's clubs are conducting a tuberculosis survey—a survey the

V. 6
1914

results of which will be inaccurate, but which, nevertheless, will serve to concentrate the attention of the women on the tuberculosis problem in their respective communities. We are employing visiting nurses, under the auspices of the state tuberculosis society. A nurse investigates conditions in one county, and the idea is that when she leaves and moves over to another county there will be left behind in that county one or more local county nurses maintained by philanthropy. So far as I know, this idea has been better worked out in Wisconsin than in any other state in the Union, certainly better than in any other state in our part of the country.

DR. GERTRUDE FELKER, Dayton, Ohio: Four years ago the House of Delegates gave to the women physicians of the American Medical Association the task of forwarding the education of the people. This committee is now known as the Committee for Public Health Education Among Women. The effort has been to find some physician in every state who would be interested in education; and through that physician as state officer to find some one in each county who would talk public health education and have in each county society a public health education committee appointed. We have asked that a woman be put on that committee in counties in which creditable work is being done by women physicians. After four years' work almost five hundred counties have appointed committees.

DR. MARY E. LAPHAM, Highland, N. C.: The purpose of my paper was to urge the appointing of an expert from the medical profession to teach the people the earliest suggestions of tuberculosis. The education of the people should come from the profession. The earliest recognition of tuberculosis must come from the people in order that the profession may have the earliest opportunity to confirm it. It is because the people do not understand the situation that the general practitioner does not have the opportunity to make a sufficiently early diagnosis.

THE HISTOPATHOLOGIC LOAN COLLECTION AND RELIEVING THE CURRICULUM*

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AND
H. G. WEISKOTTEN, M.D.
SYRACUSE, N. Y.

It was pointed out by Bardeen[1] that it is essential to have *good* histologic preparations if the student of normal histology is to see the details of structure as they exist in the tissues. Otherwise he is likely to make mistakes and to draw wrong conclusions from what he sees, and perhaps eventually to fabricate from grosser features of a histologic preparation the finer details that it does not present. This is just as true in the case of pathologic histology. A common method of handling routine teaching material is to give the student sections which he is expected to stain and mount for himself. Another practice is to distribute stained sections for the student to mount. Frequently it results that the preparations are not satisfactory and that much of the time and energy of the student is wasted in puzzling over them. For this reason it would appear to be wise to make extensive use of loan preparations.

The amount of time that can be given each year by members of the teaching staff to the preparation of histologic teaching material is limited. If this time is given to the making of a limited number of permanent loan preparations of high quality covering a limited field, there will accumulate eventually a loan collection of high grade covering a large field. Then there will be histopathologic loan collections comparable to the Minot embryologic collection at Harvard and the Mall embryologic collection at Johns Hopkins. Also the student will have for study carefully selected material, well fixed, cut into thin sections, and carefully stained and mounted. The time that the student formerly gave to the routine of staining and mounting sections he can give to actual study of the preparations.

It may be objected that the student should have the technical experience involved in staining and mounting; but with the gain in time he can be given a short but more varied training in technic in place of the oft-repeated routine. The ownership by the student of a collection of sections is a doubtful advantage as compared with the length of time that he spends in staining and mounting. The sections probably are rarely referred to after the course is completed. The mere collecting of the specimens is apt to be uppermost in the student's mind in place of the more important careful study of the material. It is not necessary to have one preparation of each kind for each student. One preparation for each pair or larger group of students is sufficient. The selection of material for permanent preparations for teaching purposes and the preparation of this material up to the point of orienting the blocks of tissue should have expended on it the greatest skill that the staff affords.

A modern course in pathology requires the use of a larger amount of experimental histologic material than was used ten or fifteen years ago. It is necessary to use to a larger extent tissues affected by means of known injurious agents under accurately known conditions. The amount of time required for the preparation of such material is very large, and the amount of material yielded by each experiment is frequently small. It is therefore obviously impossible to duplicate such material as frequently as would be required for giving each student a specimen as his personal property.

At Syracuse a loan collection as above set forth was begun by one of us (Steensland) ten years ago. A large gift from Dr. Mallory of imbedded specimens selected from his Harvard teaching material formed the nucleus of the collection and constituted a model and ideal of quality toward which to strive. As a result of the use of special care in the technic to prevent fading of the stains the oldest material is to-day apparently as good as when first prepared. Additions can be made to the collection as advances in the knowledge of diseased tissues require, and antiquated material can be replaced by new material. Each year special selection from the collection may be made for use by the students according to the trend in special directions which is given to the course in that particular year.

Pearce[2] and Gay[3] have pointed out the great advantage of correlating the work in experimental pathology and pathologic physiology with the work in pathologic histology. With a given number of scheduled hours the possibility of gain in time resulting from the use of a loan collection has an important bearing here. This gain in time for the student and the teaching staff will permit of the introduction of more work in experimental pathology and pathologic physiology into the usual course in pathology. The amount of such work that can be done by students in any particular department will depend on

* From the Department of Pathology, Syracuse University, College of Medicine.

1. Bardeen, C. R.: Report of the Subcommittee on Anatomy to the Council on Medical Education of the American Medical Association, April, 1909, Anat. Rec., 1909, iii, 415.

2. Pearce, Richard M.: The Teaching of Experimental Pathology and Pathological Physiology to Large Classes, Bull. Johns Hopkins Hosp., 1911, xxii, 404.

3. Gay, Frederick P.: A Method of Correlated Teaching of Pathology and Bacteriology in the Second Year of Medical Instruction, Bull. Johns Hopkins Hosp., 1912, xxiii, 170.

the size of the staff, the equipment, the possibilities of cooperation with other departments, the proximity of hospitals, the nature of the departmental divisions in the school involved, and other considerations. Any relief from routine, such as the use of the loan collection will afford, as pointed out above, will allow the members of the staff to give more of their best thought to improving and extending the teaching. The use of the loan collection offers a method of relieving the curriculum. It aids in providing time for the experimental and physiologic aspects of pathology, which are essential to the proper training of men who are to devote their lives to so large an extent to the study of the physiology of disease.

309 Orange Street.

LONGITUDINAL FRACTURES OF THE TIBIA BY TORSION

WITH REPORT OF A CASE

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CHICAGO

Longitudinal fractures of the tibia usually result from indirect violence as in jumping or falling from a height, and in these cases a T- or Y-shaped fracture is usually produced in which one or both tuberosities are separated from the shaft and the joint cavity involved. In fractures of this type due to direct violence it is more common to have a comminuted fracture, often compound.

Fractures from torsion or twisting occur most frequently in the humerus or femur or in the shaft of the tibia near the middle. In the humerus they are usually spiral and result from extreme passive torsion as in wrestling or in throwing a ball. We see this variety again in the fracture, or rather the epiphyseal separation, seen in small children as the result of being supported by the hand after stumbling and falling with body rotation. In the femur and tibia they usually result from a fixation of the foot with rotation of the body, which was the case in my patient.

REPORT OF CASE

History.—Mr. B., aged 42, an extremely muscular man weighing 238 pounds, has always been in perfect health and for the past sixteen years has been engaged as fireman in the Chicago City Fire Department. He is an unusually active man for his weight. On April 24, 1913, he attempted to board a moving street-car as it was rounding a corner. Owing to the fact that another passenger wishing to alight was standing on the platform, he was able only to get his right foot on the step and to catch the rear handle of the entrance. His foot being firmly anchored on the rubber-covered step, which prevented its slipping, he was able to stand aright, but the momentum of the car swinging out around the corner caused him to twist suddenly and his body to swing around to the rear of the car while he still maintained his grasp on the handle of the car and his foot-space on the step. He did not lose his footing or fall at any time, but felt something crack in his leg and experienced severe pain when he regained his balance and walked into the car. The pain increased rapidly and he had to be carried from the car.

Examination.—The patient is unable to bear his weight on the leg but does not believe it broken, as he was able at first to walk. The signs of local trauma in the way of discolorations or ecchymoses are lacking. There is some swelling about the knee-joint. Crepitus can be elicited easily on passive motion. There is no marked deformity, the leg being in perfect alignment. Increased lateral mobility is present. Measurements as to length are normal. Tuberosities of the tibia are quite markedly increased in width. Roentgenoscopy shows a rather unique fracture of the upper portion of the tibia. There are apparently three distinct lines of longitudinal cleavage extending from the interarticular space of the superior articular surface in a right-twisting spiral to well past the middle of the tibia. A V-shaped fragment is left between the articular surfaces, probably the result of the firm attachment of the crucial ligaments to the spines.

Treatment.—Temporary lateral splints and ice-bags were applied to the knee until the following day, when an attempt was made to mold the knee by lateral pressure on the tuberosities of the tibia. A plaster-of-Paris cast was applied extending from the groin down to the toes. The cast was opened anteriorly and posteriorly by means of a Gigli saw as soon as dry, adhesive plaster being used as a hinge posteriorly so that the cast could be removed and passive motion and massage instituted. Passive motion and massage were begun gently on the eighth day and continued with increasing activity. The patient was able to go back to work in eleven weeks.

It is my purpose in reporting this case not alone to call attention to unusual factors in the mechanism and pathology, but also to emphasize the necessity of, and excellent results accruing from, early passive motion in fractures involving joints. The patient reported in this case is able to walk with absolutely no limp and could touch heel to buttock on the injured side after eleven weeks.

4254 Indiana Avenue.

INJECTION OF QUININ AND UREA HYDROCHLORID IN HYPERTHYROIDISM

PRELIMINARY REPORT

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OKLAHOMA CITY, OKLA.

The following cases are reported to show the immediate results on the symptoms after injecting quinin and urea hydrochlorid. The patients have all been on medical treatment for from one to two years without improvement. In Case 1 the injection was used in conjunction with ligation of both superior thyroid arteries; in Cases 2 and 3 the injection was the only treatment employed. Improvement seems to be equally prompt without the ligation; whether or not the results will be as lasting as after ligation remains to be proved.

If there is any pain following the injection of quinin and urea hydrochlorid it is very slight, and is limited to the site of injection. A moderate degree of swelling is noted after injecting, which disappears within a week.

An all-glass syringe with a slip-joint platinum needle 2 inches in length is used for the injection.

CASE 1.—Mrs. S. K., married, schoolteacher, has had family trouble for the past few years. Goiter was first noticed three years ago while the patient was spending her vacation in Colorado at a high altitude. The enlargement and symptoms of hyperthyroidism have gradually increased in spite of medical treatment and rest. The patient is very nervous. Insomnia is marked. There is tremor of both hands. The pulse ranges from 130 to 160. There is considerable enlargement of the right lobe, about 3 inches in length. The left lobe and the isthmus are slightly hypertrophied.

Both superior thyroid arteries were ligated and 90 minims of a 1 per cent. quinin and urea hydrochlorid solution injected into the body of the right lobe, 60 minims into the left lobe, and the same quantity into the isthmus. The pulse was 160 at the end of the operation, in spite of nerve-block of the neck. The pulse was 150 the next morning, and 130 that evening, 112 the second morning after operation and 104 that

V. 6
1914

evening. The insomnia, nervousness and tremor disappeared within forty-eight hours. The following week the pulse averaged 100, gradually becoming slower until it reached 80, at which point it now remains.

CASE 2.—Miss H. S., aged 24, single, whose mother has had goiter for years, without severe symptoms of hyperthyroidism, and whose sister died of hyperthyroidism one month before, complains of nervousness, tachycardia, insomnia and a severe diarrhea of two years. The patient is losing weight. There has been amenorrhea for sixteen months. Tremor is most marked on the left side. The patient noticed goiter on the left side about two years ago, increasing in size until it now measures about 3½ inches in length. The right lobe is 3 inches long and the isthmus somewhat enlarged.

The skin at the site of the injection was infiltrated with a few drops of local anesthetic solution. Through one skin puncture over the center of the left lobe the needle was inserted and 25 minims of a 4 per cent. quinin and urea hydrochlorid solution injected at four different points into the body of the left gland. The procedure was repeated for the right lobe and the same amount injected; 30 minims were then injected into the isthmus.

The diarrhea stopped within twenty-four hours. The pulse was 90 after the injection and the general condition was improved. The patient is gaining in weight.

CASE 3.—Mrs. W. D., aged 33, married, housewife; began teaching school at 16; in a few months she noticed increasing nervousness and insomnia with slight enlargement of the right lobe. Tachycardia was first noticed while the patient was teaching and attending summer school in 1897-1898, becoming steadily worse for the past two years under medical treatment and rest. The pulse varied from 120 to 160. The patient had diarrhea ten years ago, when her only child was 1 month old; this continued for two years; there has been none during the past year. There has been tremor of both hands for eight years. There has been no nausea. The appetite has always been good. There is slight exopthalmos. The average weight is 130; it was 105 at the time of the first injection; after the injection, the patient gained 10 pounds within two weeks. She complains of constant pain over both ovaries, most marked on the left side; menstruation with dysmenorrhea occurs every two or three weeks.

When the first injection was given the right lobe was about the size of a hen's egg, and the left about half as large, with a moderate hypertrophy of the isthmus. Forty minims of a 2 per cent. quinin and urea hydrochlorid solution were injected into each lobe and the isthmus. Improvement was prompt. On the day following the injection the pulse dropped to 90; for the next two weeks while the patient remained in bed the pulse was from 70 to 80, becoming slightly accelerated when she left her bed and resumed her housework. At the time of the first injection the condition of the patient was such as to preclude any form of abdominal operative procedure without jeopardizing her life. One month later she was operated on under general anesthesia with a thorough nerve-block of the operative field, left salpingo-oophorectomy, right oophorotomy and appendicectomy being performed. The cervical canal was flexed and markedly stenosed; dilatation and curettage were done. Throughout the operation the pulse was below 90. The patient was awake and talking while the abdominal wound was being closed. The pulse was 80 during the following week. After-pain in the wound was prevented by the use of quinin and urea hydrochlorid nerve-block.

At the second injection, ten days after the operation, examination showed a small, firm, circumscribed right lobe. The left lobe and the isthmus were also reduced in size. Thirty minims of a 4 per cent. quinin and urea hydrochlorid solution were injected into each lobe and the isthmus. Next day the pulse was 80, and normal on the second day, when the patient left the hospital.

611-613 Colcord Building.

Suggestion.—Suggestion enters the understanding by the back stairs, while logical persuasion knocks at the front door.—Bechterew.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

SODIUM ACID PHOSPHATE.—Sodii Phosphas Acidi.—Sodium Dihydrogen Phosphate.—Sodium Biphosphate.—Monosodium Orthophosphate.—Primary Sodium Phosphate.—Sodium acid phosphate, $NaH_2PO_4.H_2O$, is the monosodium dihydrogen salt of orthophosphoric acid, H_3PO_4, containing not less than 82 per cent. of anhydrous sodium acid phosphate.

Actions and Uses.—Sodium acid phosphate undergoes no change in the stomach. In the intestine it is converted into disodium hydrogen phosphate (secondary or neutral sodium phosphate). In large doses it produces laxative effects similar to those produced by the official disodium hydrogen phosphate (sodium phosphate U. S. P.). The neutralization of the acid phosphate is accomplished by alkali drawn from the blood. This tends to reduce the alkalinity of the system, which reduction is prevented by the excretion of acid in the urine. Sodium acid phosphate can thus be used to render the urine acid, or increase its acidity. It is used for this purpose to assist the action of hexamethylenamine which is effective only in acid urine. For this purpose sodium acid phosphate should be given long enough before the hexamethylenamine so that it may have left the stomach before the latter remedy enters it.

Dosage.—From 1 to 1.5 Gm. (15 to 20 grains) repeated frequently until the urine becomes acid. It may be administered in sweetened water like lemonade. It should not be prescribed in solution with hexamethylenamine.

Non-Proprietary Preparations:

Sodium Acid Phosphate, M. C. W.—Manufactured by Mallinckrodt Chemical Works, St. Louis, Mo.

Sodium Phosphate, Mcnobasic, P. W. R.—Manufactured by Powers-Weightman-Rosengarten Co., Philadelphia, Pa.

Sodium acid phosphate occurs as large, colorless, transparent crystals or a white, granular, crystalline powder; odorless and having a cooling, saline and somewhat acid taste; slightly deliquescent.

Sodium acid phosphate is very soluble in water; insoluble in alcohol, ether or chloroform.

At 100° C. (212° F.) sodium acid phosphate loses its water of hydration (13.04 per cent.); at 210° C. (410° F.) it is converted into disodium dihydrogen pyrophosphate ($Na_2H_2P_2O_8$). At still higher temperatures it is changed into a mixture of sodium metaphosphate ($NaPO_3$) and sodium trimetaphosphate ($Na_3P_3O_9$).

An aqueous solution of sodium acid phosphate (1 in 20) is acid to litmus.

An aqueous solution of sodium acid phosphate (1 in 20) yields a white, crystalline precipitate with an excess of magnesia mixture solution.

With silver nitrate solution an aqueous solution of sodium acid phosphate (1 in 20) yields a yellow precipitate which is soluble in ammonia water and in nitric acid.

If warmed with ammonium molybdate solution an aqueous solution of sodium acid phosphate (1 in 20) yields a yellow precipitate which is soluble in ammonia water.

If 1 Gm. of sodium acid phosphate be dissolved in 20 Cc. of water and the solution neutralized by ammonia water, not more than a slight turbidity should appear (limit of *calcium, aluminum*, etc.).

If 1 Gm. of sodium acid phosphate be dissolved in 100 Cc. of 1 per cent. hydrochloric acid, 10 Cc. of the solution should not respond to the U. S. P. time limit test for heavy metals.

If 0.1 Gm. of sodium acid phosphate be dissolved in 10 Cc. of 10 per cent. sulphuric acid, the solution should not respond to the modified Gutzeit's test for arsenic proposed for the U. S. P. IX.

If 0.1 Gm. of sodium acid phosphate be dissolved in 10 Cc. of 1 per cent. nitric acid and 1 Cc. of silver nitrate solution added, not more than a distinct opalescence should appear within one minute (limit of *chloride*).

If from 1 to 2 Gm. of sodium acid phosphate be dissolved in 50 c.c. of 1 per cent. hydrochloric acid and the sulphate deter-

mined in the usual way, the weight of barium sulphate found should correspond to not more than 1 per cent. of hydrated sodium sulphate ($Na_2SO_4.10H_2O$).

If from 1 to 2 Gm. of sodium acid phosphate be dried for 1 hour at 60° C. (140° F.) and the temperature be then raised to 100° C. (212° F.) and maintained there until the salt ceases to lose weight it should not lose more than 15 per cent. of the weight taken (absence of an undue amount of *water*).

If from 1 to 2 Gm. of sodium acid phosphate be weighed, dissolved in 10 Cc. of wafer, 10 Cc. of a cold, saturated solution of sodium chloride added, and the solution titrated with normal potassium hydroxide, using phenolphthalein as indicator, the amount of alkali consumed should correspond to not less than 82 per cent. of anhydrous sodium acid phosphate. 1 Cc. of N/1 KOH = 0.11917 Gm. of NaH_2PO_4.

If from 0.1 to 0.2 Gm. of sodium acid phosphate be weighed, dissolved in 10 Cc. of water, the solution neutralized with normal potassium hydroxide (free from chloride) using phenolphthalein as indicator, 50 Cc. of tenth-normal silver nitrate added, sufficient zinc oxide (free from chloride) added with stirring to render the mixture neutral to litmus paper, the mixture diluted to 100 Cc. with water, the mixture filtered through a dry filter, and the residual silver nitrate in 50 Cc. of the filtrate determined by titration with tenth-normal potassium sulphocyanate in the usual way, the silver nitrate consumed should correspond to at least 82 per cent. of anhydrous sodium acid phosphate. 1 Cc. of N/10 $AgNO_3$ = 0.003972 Gm. NaH_2PO_4.

TETANUS ANTITOXIN.—(See N. N. R., 1913, p. 218.)

Slee Laboratories, Swiftwater, Pa. (The Abbott Alkaloidal Co., Chicago.)

Slee's Refined and Concentrated Tetanus Antitoxin (Globulin Solution).—Marketed in syringes containing from 1,500 to 5,000 units each.

NORMAL HORSE-SERUM.—(See N. N. R., 1913, p. 236.)

Slee Laboratories, Swiftwater, Pa. (The Abbott Alkaloidal Co., Chicago.)

Slee's Normal Horse Serum.—Marketed in vials containing 10 and 20 Cc.

AMPOULES EMETINE HYDROCHLORIDE, P. D. & Co.—This article has been accepted for inclusion with New and Nonofficial Remedies.

Each ampoule contains emetine hydrochloride 20 mg. (⅓ grain). Prepared by Parke, Davis & Co., Detroit, Mich.

Therapeutics

CONSERVATION OF ENERGY

Crile's work in the investigation of shock[1] and his theory of the power to withstand and the development of energy which he terms the "kinetic system" should be understood by every practitioner of medicine. He believes that the brain, the thyroid, the adrenals and the muscles of the body coordinate to develop what may be termed the power, the forcefulness, the power to withstand, or the reserve strength, of the system. If any one set of these organs is overworked, the body loses strength and symptoms of shock are liable to occur when any traumatic, emotional, toxic or drug cause for it exists.

The danger of "brain-fag" has long been understood. Though the brain can stand more hours of work than the muscles of the body, still when it is overworked, serious nervous disturbances may develop, or when some injury, operation or infection occurs the patient is likely to suffer shock, and the prognosis is not good, as the power to survive, or the ability to endure, the disturbance is greatly diminished. It is also being recognized that a brain is more readily overworked if the work is disagreeable or is beyond the mental capacity, or if too much or increased responsibility is placed on an individual during or just beyond the middle period of life. A middle-aged man whose brain is uneducated, if set at machine work, will probably suffer injuries from incoordination of muscle movements, or if compelled to do too much desk work, will make many mistakes. If an educated brain is suddenly overworked, the possessor is likely to have nervous breakdowns and perhaps become hysterical or neurasthenic, as such persons are overworking their thyroids and many times also their adrenals.

Shock, more or less acute, or muscle debility, more or less prolonged, from severe or repeated muscle tire, is recognized by all athletic instructors. As frequently seen by physicians, it is represented by variations of circulatory debility, with or without some cardiac dilatation, generally with lowered blood-pressure, due many times to nothing but muscular overexertion. If such patients suffer from traumatism or from acute infection, the tendency to shock is greatly increased.

Hyperactivity of nervous energy, strenuosity, so constantly seen to-day, among our best citizens, causes a varying degree of continuous hypertension, which probably means overstimulated adrenals and may result either from too much mental energy, from too much physical speed in daily life, or from a combination of the two, which we recognize when we state that a certain man is a "hustler," or is "making his mark in the world." The future of such a person is one of hypertension and long later cardiovascular-renal breakdown. This hypertension may be termed "controlled" and is probably governed by adrenal stimulation. While such a person—generally a man—is younger, and while his machinery runs smoothly, he is in perfect health and is doing his part of the world's work, but physicians recognize that if he suffers from any one of Crile's enumerated causes of shock, he is likely "to go to pieces." Such individuals often die unexpectedly from pneumonia or from the shock from injuries or surgical operations, or they break down during the active period of life from sudden loss of blood-pressure due to circulatory tire, or from cerebral disturbance due to brain-tire. These persons are using up their reserve energy and have none left for emergencies.

Another cause of the breaking of the kinetic chain is that disturbance of the thyroid which may be termed "uncontrolled hypertension" and which occurs mostly in women. This is a condition caused by social excitement and late hours, with the irritations of confusion, bright lights, late dinners, alcohol and coffee. Even if sleep is prolonged into the morning hours, energy is not thus conserved, but is constantly and progressively lost, for the recuperative hours are insufficient when compared with the hours of energy. Not only oversexual excitement, but unsatisfied sexual excitement is another disturbance of the thyroid part of this kinetic chain. One has but to note the abnormal, unphysiologic and immoral dance termed the "tango" to realize what is happening to the young people, especially to the hysterical, neurotic and socially or physically tired girl. Whether or not voluptuousness is aroused by these dances, the wear and tear on the central nervous system is enormous, probably to the disturbance not only of the thyroid but of the three other parts of the kinetic system. The results must be nervous exhaustion, exacerbation of any neurotic tendency, and in girls the development of more or less hysterical phenomena.

The effect of sorrow, grief or mental shock on the thyroid is well understood, and those who have been subjected to such depressing influences do not rally well when traumatic, surgical or infective emergencies occur.

1. Crile, George W.: Shock, THE JOURNAL A. M. A., Dec. 6, 1913, p. 2027.

V. 6
1914

Consequently, the prognosis of recovery from illness in such patients is less favorable.

Some practical therapeutic conclusions to draw from the foregoing are that, except in an emergency, a patient who is to undergo operation should rest for several days, as the liability to shock will be diminished. Also, it is a serious mistake to starve a patient too long or to purge too severely before an operation. Such treatment tends to interfere with normal tone, probably because the adrenals may be disturbed. Also, it is good preparatory treatment to give a patient considerable amounts of carbohydrate foods for several days before operation, as when vomiting or stomach irritability occurs after operation, such foods cannot be administered for many hours, and sometimes for several days, and there is danger of acidosis from such carbohydrate starvation.

To aid in the conservation of the kinetic system during illness sleep is absolutely necessary. If this cannot be obtained by ordinary methods of fresh air, sponging the body with hot or tepid water according to the temperature of the patient, the proper care of the bowels and the proper kind of food, hypnotics are necessary. The temperature of the patient will always be lowered if good sleep occurs, as there is more muscle-rest as well as an absence of stimulation of all parts of the organism from a wakeful brain. Quinin, salicylic acid, caffein, atropin, or any other cerebral stimulant should not be given in the afternoon or evening to a patient who needs sleep. On the other hand, a sluggish, indolent brain that does not send its normal stimulation to the different parts of the body, perhaps not even to the adrenals, should be awakened in the morning with a cup of coffee.

The depressant action of prolonged insomnia in persons who are otherwise well and the consequent lowering of the power to withstand or the forcefulness of the kinetic system in possible emergencies should be recognized. Chronic insomnia, even if the patient obtains a few hours of sleep, is very serious and should be combated by every sensible method.

Nothing causes sleeplessness, especially in the sick, more than skin irritation, an uncomfortable bed, lack of smoothness of the undercovering of the bed, or an overheated or overchilled room. All of these irritants should be corrected.

Intestinal indigestion should, if possible, be prevented, as any absorption of proteins that have not disintegrated to the final product for proper absorption may be digested outside of the intestine, that is, absorbed before they have reached the molecular construction that is non-irritant. Such substances in the blood will cause one of two things: increase of the fever with anaphylactic symptoms, or depression, especially of the adrenals. Overdistention of the intestines with gas, which causes more or less intestinal paralysis, will also probably inhibit the adrenals. At any rate, such a condition seriously interferes with splanchnic circulation, and if the blood-vessels are not properly toned by sufficient adrenal vasopressor substance they widely dilate, and the patient is in a condition of shock.

In spite of the most discriminating care of the food received by the patient, there may be gastro-intestinal indigestion and absorption of depressing products. Also the germ of infection may produce depressant substances and the end products of ordinary metabolism may be more or less retained in the system. Therefore our aim should be to promote elimination by all the emunctories, the bowels, kidneys and skin. The greater such elimination, the less likelihood of depression of the kinetic system; but the method selected for increasing elimination must depend on the condition of the patient. A patient who is severely prostrated should certainly not be profusely sweated. A patient whose circulation is greatly depressed, that is, a rapid, weak heart with a very low blood-pressure, should not be further debilitated by profuse bowel movements. Patients whose kidneys are irritated and more or less insufficient, especially if there is edema, should not receive large amounts of water in the hope of increasing the amount of urine; good judgment as to the amount of fluid advisable should be used with each patient. Ordinarily, during illness, goodly amounts of water should be drunk. The bowels should be moved daily, perhaps more than once a day. The skin, if possible, should be kept moist with spongings when indicated. The patient whose skin is dry and hot should not be sponged with alcohol as this tends to inhibit the normal secretions of the skin. A dash of alcohol in a large amount of water for sponging is simply absurd and should be discouraged; it means nothing but an odor. If there is profuse perspiration, however, and especially if there is prostration, pure alcohol sponging should be given, as it will tend to dry up the unnecessary hypersecretion.

Another mistake is to apply the ice-cap to every patient with high fever. If there is headache or symptoms of meningitis the ice-cap is of value; but high fever alone does not indicate that an ice-cap is needed. It has not been shown that such treatment ever reduced the temperature. It may, however, seriously depress the cerebral centers, perhaps disturb the nutrition of the hair and thus cause its profuse loss after the fever has subsided.

In the conservation of energy in patients who must be ill for some weeks, the necessary elements of nutrition should not be forgotten, namely, iron, given in substance, if the patient cannot receive meat or meat-juices; sodium chlorid; some of the fruit salts as represented by oranges; starch and perhaps sugar; some protein (and raw egg albumin may not offer good protein for absorption); lime, either as represented by milk or given as one of the calcium salts, and a sufficient amount of water.

To summarize, thorough physiologic therapy is always to be given to a patient.

Spanish Medical Periodicals Menaced.—Dr. De Diego deplores the way in which commercialism has invaded the drug business and medical publications of Spain. He warns against the present tendency as indicating a danger that the drug business and the medical periodicals may be monopolized by non-professional persons. Medicine for physicians and pharmacy for pharmacists, he thinks, should be the slogan. He says that of the sixty-odd legitimate medical periodicals published in Spain and Portugal less than six show a profit. The others barely pay expenses, and if the commercial house-organs continue their efforts to drive the legitimate medical periodicals from the field, the latter will have to suspend publication. He asserts that the fate of the medical press lies with the members of the profession, who should protect the legitimate publications with enthusiasm and energy, as the true medical press is of vital importance to the medical profession. His article is quoted in full in the *Siglo Medico*, Nov. 1, 1913.

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SATURDAY, JANUARY 10, 1914

PATHOGENICITY AND VIRULENCE OF BACTERIA

It is easy to understand how bacteria whose metabolism produces demonstrable toxic substances give rise to toxic symptoms in the organism which acts as host. To this class belong such bacteria as the diphtheria and tetanus bacilli. The pathogenicity of organisms which generate no such toxic substance or exotoxin is not so easily explained. Thiele and Embleton[1] have recently published experiments which suggest that the capacity of an organism to produce disease depends on the amount of toxic protein-cleavage products which may be formed by the action of antibodies on the bacterial protoplasm.

These authors divide the bacteria with which we are concerned into three groups:

In Group 1 they place the organisms against which the body produces very little antibody, as a result of which the bodies of these bacteria are very slowly broken down into simpler products, and hence these organisms are practically non-pathogenic.

In Group 2 are placed the organisms against which the body produces antibodies in moderate quantities. The bacteria are acted on by the antibodies or ferments, and are split into simpler compounds. This process is so gradual that the protein-cleavage products, not being immediately broken down beyond the toxic stage, accumulate in the system, and produce toxic symptoms. This group contains most of the pathogenic organisms.

Group 3 consists of those bacteria against which the antibody activity is very high. If these organisms succeed in growing within the body the protein substances are so rapidly broken down that they are soon split beyond the toxic stage, no toxic products accumulate and no symptoms are produced. These organisms are ordinarily non-pathogenic.

Thiele and Embleton made experiments in which they caused non-pathogenic organisms belonging to Group 1 to become pathogenic by raising the antibody activity against them. This was accomplished by giving a very large injection of killed organisms to guinea-pigs, and after a period of from five to fifteen days inoculating the guinea-pigs with a small quantity of the living bacteria. Animals so treated died in two or three days of intoxication. Control animals similarly inoculated but without the previous injection of killed organisms gave no toxic symptoms. These results indicate that bacteria non-pathogenic to certain animals became pathogenic when the antibody activity against them was increased. In these cases the presence of toxic substances in the blood was shown by injecting it into the veins of normal animals. Immediate death with the characteristic symptoms and post-mortem findings of anaphylaxis resulted.

Experiments were also made on organisms of the group regarded as non-pathogenic because the antibody activity against them is high. The injection of a quantity of hypertonic saline solution decreases antibody formation, and advantage was taken of this fact by injecting the organisms to be tested with such a saline solution within the peritoneal cavity. Death from toxemia resulted in every case. These results are interpreted to show that the pathogenicity of bacteria depends on the activity of the antibodies or ferments in the system of the host. If such activity is either very slight or very high the organism is non-pathogenic. By the increasing or decreasing of the antibody activity in the respective cases these bacteria may be made pathogenic.

Thiele and Embleton note that many non-virulent organisms on being made virulent develop a capsule. This phenomenon is apparently part of the process by which the bacterium modifies its characteristics to adapt itself to its environment. The antibody activity of the host represents an unfavorable condition, to which the bacterium must either adapt itself or perish. Becoming adapted to the hostile environment spells virulence, and the capsule formation which so frequently accompanies it is explained as follows: When a ferment comes in contact with an albuminous substance which it can attack it will gradually penetrate it; if this substance is a living bacterium it is destroyed. If, however, the bacterium develops the faculty of surrounding itself with a zone of such material and of renewing it by fresh extrusion from its own cytoplasm as rapidly as it is dissolved by ferment activity, the bacterium lives on unaffected. Virulence is then frequently an induced process, associated with the production of a capsule from which the toxic protein-cleavage products can be liberated by ferments, and which furnishes at the same time a barrier against phagocytosis.

The entire work impresses on us afresh the fact that the mechanism of pathogenicity and virulence is closely connected with changed activity or allergy on the part of the host, and that by a better understanding of the one we may attain a broader comprehension of the other.

1. Thiele and Embleton: Proc. Royal Soc. Med., 1913, vi, 99; Ztschr. f. Immunitätsforsch. u. exper. Therap., 1913, xix, 643.

V. 6
1914

THE VARIATIONS IN THE CONTENT OF SUGAR IN THE BLOOD

Alimentary glycosuria, as exhibited in the renal excretion of sugar when undue amounts of carbohydrates are ingested by persons who fail to manifest this symptom under ordinary conditions of diet, has long been recognized and investigated. The prominence which the clinical estimation of the sugar-content of the blood has assumed in recent months, and the diagnostic importance which has been attached to the variations in this blood-constant as a possible index of incipient metabolic disorder, have seemed to call for a careful determination of the precise effect which the ingestion of carbohydrate may exert in altering the quantum of blood-sugar under well controlled conditions in otherwise healthy persons. The determination of normal values and physiologic deviations from them is always essential as the rational beginning in the establishment of a new scheme of diagnostic procedure. Such an undertaking has lately been carried out in the medical clinic of the University of Copenhagen by Dr. Jacobsen.[1] Estimations were made after comparatively brief successive intervals in the same persons who had taken various substances in suitable quantities three or four hours after breakfast. It is well known that healthy persons frequently exhibit glycosuria after the ingestion of from 150 to 200 gm. of dextrose under similar conditions — and this is usually taken as an index of alimentary glycosuria. In contrast with some earlier studies the Danish investigator has observed an unmistakable hyperglycemia in every instance after ingestion of 100 gm. of dextrose; in some instances glycosuria likewise appeared simultaneously. In view of this fact, Jacobsen points out that a mild transient glycosuria under such circumstances is no longer to be looked on as a diabetic symptom.

Comparable quantities of starch administered in the form of bread likewise led to hyperglycemia. The increase in the percentage of sugar was quite as pronounced, in some cases, as that which occurred after the introduction of glucose; but the onset of the hyperglycemia was slower, as might be expected, in view of the slower liberation of sugar by the digestive processes. Fat or protein, in contrast with glucose or starch, were without effect on the level of the sugar in the blood; but when starch was administered along with fat the degree of the alimentary hyperglycemia was relatively mild. The explanation of the inhibitory effect of the fat on the tendency to hyperglycemia is presumably to be sought either in the fact that the presence of the fat mechanically interferes with the ready digestion of starch and consequent liberation and absorption of sugar, or that fat retards the discharge of contents from the stomach and delays absorption in this way.

Effects of a similar sort were observed also in the blood of diabetics fed as indicated before. There is a tendency, however, for a greater increase in the blood-sugar content to assert itself in the abnormal than in the normal persons after an identical intake of carbohydrate; and the same increment of blood-sugar in diabetics is far more likely to lead to glycosuria. In healthy persons, for example, the content of blood-sugar may be raised to 0.16 or 0.17 per cent., without inducing an elimination of glucose. In diabetics the consequences are exaggerated in every direction. The possession of these newer data will serve to orient us better in the direction of successful diagnosis on the basis of the information to be obtained for the estimation of the sugar-content of the blood under known or controlled conditions of diet.

1. Jacobsen, A. T. B.: Untersuchungen über den Einfluss verschiedener Nahrungsmittel auf den Blutzucker bei normalen, zuckerkranken und graviden Personen, Biochem. Ztschr., 1913, lxvi, 471.

OVARIAN TRANSPLANTATION

In 1909 and 1911, W. E. Castle and John C. Phillips[1] reported successful experiments made by them in ovarian transplantation in guinea-pigs. They now report a third successful transplantation as corroborating their theories and give the conclusions drawn from their observations. The conservatism of their previous reports renders their deductions especially significant.

In their first successful experiment the ovaries from a black guinea-pig were transplanted into a previously castrated white one, which, during one year, produced six black-coated young like the animal from which the ovaries were obtained, and entirely different from the white mother-pig. The most careful investigation disclosed no other factor than the transplanted ovaries which could have caused the phenomenon.

In the second successful experiment the color-factors were repeated. The ovaries from a colored guinea-pig were grafted on an albino, which bore a brown-eyed cream young one to an albino mate. The characteristics of the other young born to the albino pair were exactly such as would have been produced had the colored animal been mated with the albino male.

In the third successful experiment,[2] a different factor obtained. The animals mated were alike in all genetic features. The mother guinea-pig, of an agouti hair-pattern—the upper part of the body brownish with a mixture of red and black, the belly yellowish—received the ovaries from a light cinnamon animal. The reported result shows that "the sojourn and development in the body of a brown animal of an ovary taken from a cinnamon animal does not seem to have altered in any respect the initial genetic possibilities of the germinal substance."

The conclusion arrived at is that these three cases furnish substantial evidence in favor of Weismann's theory that in the higher animals the germinal sub-

1. Castle, W. E., and Phillips, John C.: A Successful Ovarian Transplantation of the Guinea-Pig and its Bearings on Problems of Genetics, Science, New Series XXX, 312; On Germinal Transplantation in Vertebrates, Publication 144, Carnegie Institution, Washington, 1911.

2. Castle, W. E., and Phillips, John C.: Further Experiments on Ovarian Transplantation in Guinea-Pigs, Science, Nov. 28, 1913, p. 783.

stance and the body of the animal—that is, the germ-plasm and the soma—are physiologically distinct, and that the germ-plasm is not modified through somatic influences. The familiar formula "acquired characters are not transmitted," and the theory that happenings to the individual parent which do not affect the germ-plasm will not be transmitted to the offspring, thus receive, not, indeed, absolute proof, but strong confirmation.

All this is of interest through the present tendency toward the framing of laws in accordance with the idea that the children of criminals, alcoholics or drug-slaves probably will inherit these undesirable qualities. Such qualities may be racial or familial and not due to the influences of one generation; but they do not inevitably appear in all members of the stock. Biology seems to give definite evidence that acquired qualities are not transmitted and that the temporary custodian of the germ-plasm cannot interfere with the family strain.

Our lack of definite knowledge concerning the large problems of heredity appears to be emphasized by these conclusions. Many defects due to factors which have affected the family germ-plasm are inherited, but there is no positive evidence that all parental qualities are likely to be inherited. In connection with the Mendelian principles of heredity, the cases reported by Castle and Phillips are of much deeper significance than their biologic interest.

These experimenters declare that the method is not practical for domestic animals or man unless the tolerance of the body to foreign tissue may be increased. Out of one hundred and forty-one female guinea-pigs engrafted with foreign ovaries, but three produced young. In eleven cases the original ovarian tissue was regenerated, the young in three of these cases showing the genetic character of the mother, but none of the graft. At necropsy in eighty-seven cases no ovarian tissue was found, as the transplanted ovaries failed to persist.

The experience of Castle and Phillips indicates that without careful investigation, reports of cases of successful ovarian transplantation in the human being must be viewed with suspicion, though it is suggested that an increased tolerance of the host may be secured by an immersion of the transplant-tissue for a time in a nutrient medium or in serum from the host. As yet, however, Castle and Phillips have not tried these methods.

DEATHS OF PHYSICIANS IN 1913

During 1913 the deaths of 2,196 physicians in the United States and the Dominion of Canada were noted in THE JOURNAL. Reckoning on a conservative estimate of 150,000 physicians, this is equivalent to an annual death-rate of 14.64 per thousand. For the eleven previous years the death-rates were as follows: 1912, 14.13; 1911, 15.32; 1910, 16.96; 1909, 16.26; 1908, 17.39; 1907, 16.01; 1906, 17.2; 1905, 16.36; 1904, 17.14; 1903, 13.73, and 1902, 14.74. The average annual mortality for the period from 1902 to 1913, inclusive, was therefore 15.82 per thousand. The chief death causes in the order named were senility, "heart disease," cerebral hemorrhage, pneumonia and nephritis. The age at death varied from 22 to 98, with an average of 59 years, 8 months and 12 days. The general average age at death since 1904 is 59 years, 7 months and 21 days. The number of years of practice varied from 1 to 73, the average being 32 years, 11 months and 7 days. The average for the past 10 years is 32 years, 7 months and 22 days.

CAUSES OF DEATH.—There were 253 deaths assigned to general diseases; 246 to diseases of the nervous system; 301 to diseases of the circulatory system; 166 to diseases of the respiratory system; 125 to diseases of the digestive system; 148 to diseases of the genito-urinary system; 298 to senility; 7 to diseases of the skin; 3 to diseases of bones; 43 to suicide; 101 to accident; 19 to homicide, and 82 to other causes. Among the principal assigned causes of death are senility, 298; "heart disease," 227; cerebral hemorrhage, 195; pneumonia, 150; nephritis, 140; accident, 101; after operation, 80; tuberculosis, 68; cancer, 54; suicide, 43; arteriosclerosis, 30; diabetes, 29; septicemia, 26; appendicitis, 25; angina pectoris, 23; gastritis, 21; homicide, 19; typhoid, 18; influenza and peritonitis, each 11; cirrhosis of liver, 10; anemia, mental alienation, myocarditis, gastric ulcer and cholecystitis, each 9; erysipelas and scarlet fever, each 8; meningitis and abscess, each 7; bronchitis and intestinal obstruction, each 6; diphtheria and prostatitis, each 5; locomotor ataxia, general paralysis of the insane, embolism, pleurisy, duodenal ulcer and enteritis, each 4; malaria, alcoholism, chorea and endocarditis, each 3; typhus fever, tetanus, rheumatism, aneurysm, hernia, mastoiditis and labor, each 2 deaths, and pertussis, syphilis, drug addiction, epilepsy, Hodgkin's disease and osteomyelitis, each 1 death.

The causes assigned for the 101 deaths from accident were: automobiles, 34; falls, 11; runaways, 10; poison, 9; drownings and railway, each 8; conflagrations and street cars, each 3; exposure, asphyxiation, crushing, sunstroke and strangulation, each 2, and burns, firearms, cutting instruments, explosion and electricity, each 1. The 43 physicians who ended their lives by suicide selected the following methods: firearms, 24; poison, 14; strangulation and cutting instruments, each 2, and jumping from high places, 1. Of the 19 homicides, 17 were due to firearms and 2 to clubbings or beatings. Of these, 5 occurred in feuds or affrays.

AGES.—Of the decedents, 68 were between the ages of 21 and 30; 213 between 31 and 40; 317 between 41 and 50; 419 between 51 and 60; 500 between 61 and 70; 399 between 71 and 80; 146 between 81 and 90, and 24

V. 6
1914

were more than 90 years of age. The greatest mortality occurred at the age of 63, when 70 deaths were recorded; at 68, with 60 deaths; at 66, with 56 deaths; at 60 with 55 deaths; at 73, with 51 deaths, and at 69 and 70, when 50 died. There were 9 deaths at 91; 5 at 92; 3 at 93; 2 each at 97 and 98, and 1 each at 94, 95 and 96.

YEARS OF PRACTICE.—By periods of 10 years the physicians died as follows: in the first decade, 197, of whom 4 had been in practice less than 1 year and 25 less than 2 years; in the second decade, 351; third decade, 465; fourth decade, 495; fifth decade, 424; sixth decade, 192; seventh decade, 60, and eighth decade, 3, two of whom had been in practice more than 73 years.

MILITARY SERVICE.—During the year, 258 died who had served in the Civil War, and of these, 72 followed the fortunes of the Lost Cause, 92 were medical officers of United States Volunteers and 2 were medical cadets. There were 3 veterans of the Mexican War; 19 had served in the Spanish-American War, 1 had served in Indian wars, 3 had been in the Indian Service, and 15 had seen service in foreign wars. The Army lost 29 medical officers, past and present, 4 officers of the Medical Reserve Corps on the active and inactive lists, and 13 acting assistant or contract surgeons. The Navy lost 14 medical officers, the Public Health Service 12 officers and the Organized Militia 30, of whom 11 had attained the grade of surgeon-general.

MEDICAL POSITIONS.—Medical colleges sustained the loss of 155 professors, lecturers, instructors and demonstrators; hospitals lost 280 members of staffs; municipalities, townships and counties, 150 health officers, and school boards or boards of education, 85 members. There were 25 deaths of members of state boards of health, medical registration and examination and charities; 45 of coroners and medical examiners, and 93 of railway surgeons.

CIVIL POSITIONS.—Of those who died, 1 had been a member of Congress; 10 members of state senates; 32 members of the house of representatives; 44 had been mayors; 28 councilmen or aldermen; 41 had served in various civil official positions; 11 had been postmasters; 24 editors of medical or lay journals; 24 were also clergymen, of whom 14 were or had been foreign missionaries; 9 had been attorneys; 2 had been members of the diplomatic corps; 33 were bankers; 6 dentists; 16 pharmacists; 3 chemists, and 9 had been medical directors of life insurance companies or fraternal insurance societies.

THE HISTORY OF SPECTACLES

We have already given[1] an account of the discovery of the earliest known pair of spectacles, those belonging to Willibald Pirkheimer in the Wartburg, by Greeff of Berlin; more recently Greeff[2] has described a still earlier pair, probably made before the year 1500, which were brought to his attention by Sudhoff of Leipsic. These were found in an old volume of incunabula by the well-known antiquarian bookseller, Jacques Rosenthal, and were presented by him to the Germanic National Museum at Nuremberg, where they are now to be seen in the sections devoted to costumes and personal ornaments. The frame is of tanned blackened leather, of obvious Nuremberg make, and, like the Pirkheimer spectacles, of the old traditional "nose-rider" shape, but they are clumsier and thicker than the Pirkheimer pattern of 1520-1530. The lenses are lacking. In view of these characteristics and of the fact that they were found in an old fifteenth-century folio, Greeff and Sudhoff seem to have no doubt that they were made before 1500.

Greeff[3] also traces the evolution of the true modern spectacles from the old nose-riders (the originals of the pince-nez), and describes the binocles or *Scheerenbrillen* which came into fashion in 1796, consisting of two lenses mounted on a scissor-shaped handle, the originals of the modern lorgnette. The earliest form of the true spectacle glasses was invented and introduced by Monsieur Thomin, *marchand miroitier lunettier* of Paris, and were essentially "temple spectacles" (*lunettes à tempes*), the shanks extending no further than the temples. There were two kinds, one with a small end-platelet, which was represented in a portrait by Pelham, an English painter of the eighteenth century, of which a copper plate was made by J. Clark; the other, which is to be seen in Graff's portrait of Chodowiecki (1795), with a characteristic large circular fastener at the end of the shank, which held the spectacles against the temple. The next stage was that of the "ear spectacles," which at first had crude, heavy, clumsy shanks, jointed at the end, like those in the Beethoven house at Bonn, which were further improved by slitting the ends or by means of an olive-shaped fastener. The next improvement, consisting of a jointed appendage to the shank which passed underneath the occiput, was made in 1752 by the London optician J. Ayscough. A later variant of this joint passed downward and backward underneath the ear. Still another variety of this joint was so arranged that it could be bent suboccipitally, as in the first instance, but otherwise bent back *in extenso* when the glasses were not in use. These were called extension-spectacles (*Ausziehbrillen*). Up to the beginning of the eighteenth century the lenses were still very large and round; but after that time they began to be octagonal, square, rectangular and finally oval. About the same time the bridge began to change in shape, first assuming the form of a K placed sidewise.

The origin of the present fashion of large circular lenses set in delicate tortoise-shell mounts is a pastel portrait of the painter Chardin in the Louvre, executed by himself in 1760, the spectacles in which were copied

1. The Earliest Known Pair of Spectacles, THE JOURNAL A. M. A., Nov. 9, 1912, p. 1721.
2. Greeff, R.: Ztschr. f. ophth. Optik, 1913, i, 46.
3. Greeff, R.: Ztschr. f. ophth. Optik, 1913, i, 11.

with great success by recent French opticians and are known in Paris as Chardin spectacles. The same type is familiar to us in a well-known portrait of Benjamin Franklin. Four or five years ago, says Greeff, a young woman or lady of fashion would have been horrified at the notion of wearing spectacles of such an unsightly type. To-day she would regard it as not only chic, but the height of elegance. Plenty of people in America are inclined, no doubt, to revive the traditions of "old Ben Franklin's days" for similar reasons, although the optical advantages and the comfort of these large lenses are obvious.

Current Comment

THE EFFECT OF PNEUMOTHORAX ON THE BLOOD

Attention has previously been called to the undeniable increase in the number of red blood-corpuscles and in the content of hemoglobin in the blood which life at higher altitudes calls forth in man.[1] The fundamental factor in bringing about this functional response is admitted to be the lowered partial pressure of the oxygen of the atmosphere at the higher levels. There are ways of decreasing the oxygen-obtaining capacity of the blood other than by diminution in the tension of the gas in the inspired air. The function of the inner lung-surfaces that are used in respiration can be limited decidedly by the production of a one-sided pneumothorax—a procedure which at present finds application in the domain of therapy. Under such circumstances the response of the blood-forming organs is quite comparable with what takes place at altitudes. The number of erythrocytes and the content of hemoglobin rapidly increase.[2] There are evidences that this is not the result of mere concentration of the blood-plasma; the blood picture as well as the analytic data clearly suggest a new formation of the blood components concerned in the oxygen-carrying function. It would appear, therefore, that it matters little how a deficiency of respired oxygen is threatened in the body; the response in the way of compensatory processes such as are represented in the regeneration or new formation of blood-cells and pigment is prompt and characteristic.

THE SYNTHETIC CAPACITIES OF BACTERIA

There is constantly growing evidence that the animal organism is capable of synthetic activities which were scarcely appreciated or in any way anticipated a generation ago, when such powers were relegated almost exclusively to the domain of plant performances. Nevertheless it is likewise becoming clear that however important and effective these constructive functions of the animal cells may prove to be, they have certain limitations which render them incapable of meeting in a synthetic way all the demands which nutritive emergencies put on them from time to time. From observations of Abderhalden, Osborne and Mendel, and others, it appears that lack of cyclic groups, such as are represented by tyrosin, tryptophan and phenylalanin in the ordinary proteins, leads to nutritive failure, which cannot be remedied by constructive functions on the part of the organism suffering from a loss of these aromatic amino-acids. For this reason gelatin, for example, being deficient in the cyclic "building-stones," fails to satisfy the protein requirements of the animal body completely. Plants, of course, construct the cyclic derivatives readily from elementary compounds. The supreme synthetic efficiency of the vegetable organism is shown in the production of the familiar alkaloids which afford exquisite illustrations of the type of substance referred to. The bacteria, which are commonly classed with plant forms, are likewise known to exhibit synthetic capacities and to construct their own complex protoplasm in relatively simple nutrient mediums. Whether or not this power of synthesis actually includes the ability to construct cyclic compounds like tyrosin, etc., has been answered in a positive sense by recent experiments of Tamura.[1] By growing bacteria in solutions devoid of any organic substances other than lactic acid, glycerol and asparagin, he has obtained an abundant "crop" of micro-organisms, which, on analysis, exhibited the presence of the nitrogenous phosphatids, purin bases and proteins in abundance. The new construction of the cyclic aromatic fragments of the proteins, so difficult to demonstrate in the animal organism, is thus shown to proceed with ease in the metabolism of the bacteria.

AN ORDINANCE TO PUNISH MISLEADING ADVERTISING

Following the recent exposure in Chicago of quack doctors, who exist there, as elsewhere, only by virtue of the use of the newspapers, the city council has passed an ordinance intended to prevent false and misleading newspaper advertising in Chicago. It follows closely the *Printers' Ink* bill, which, with modifications, has already been enacted into law in sixteen states.[2] The statute not only reaches the quack who depends on newspaper advertising for the prosperity of his swindling operations, but is also sufficiently broad to cover other fraudulent advertising, in particular, advertisements of fake auctions, fire sales, bankrupt sales, etc. It forbids the publication of any "advertising which contains assertion, representation or statement which is untrue, deceptive or misleading."

1. Blood Phenomena of Altitude, editorial, THE JOURNAL A. M. A., July 26, 1913, p. 283.
2. Bürker, K.; Ederle, R., and Kircher, F.: Ueber Aenderung der sauerstoffübertragenden Oberfläche des Blutes bei Aenderung der respiratorischen Oberfläche der Lunge, Zentralbl. f. Physiol., 1913, xxvii, 623.

1. Tamura, S.: Zur Chemie der Bakterien II. Ztschr. f. physiol. Chem., 1913, lxxxviii, 190.
2. Truth in Advertising, Propaganda Department, THE JOURNAL A. M. A., May 3, 1913, p. 1377.

Simple Mind or Mediocre.—Simple minds are contented with mystic solutions, with an illusory play of words. Men of science investigate with an open mind, are satisfied with their work, which, if slow, is certainly progressive. But the mediocre mind wishes to know everything without much trouble, and has a strange longing for prompt and safe formulae. Such men are the predestined victims of prejudice and scientific quackery.—Lugaro, Problems in Psychiatry.

V. 6
1914

Medical News

ILLINOIS

Personal.—Dr. Alonzo B. Middleton, Pontiac, left January 1 for Europe.——Dr. Clinton Helm, Rockford, who has been ill for a long time, is reported to be slowly improving.——Dr. Charles E. Sisson, Elgin, is reported to be seriously ill with scarlet fever.——Dr. L. S. Gabby of the Kankakee State Hospital will assume charge, some time this month, of the pathologic and research laboratory established and equipped by Drs O. L. Pelton, Sr., and Jr., of Elgin.——Dr. Cyrus W. Rutherford has been appointed local surgeon for the Cincinnati, Hamilton and Dayton Railway at Newman.

Promotional Examination.—At a promotional civil examination held November 28 for members of the Cook County Hospital staff the following received positions as chief attending physicians and surgeons: Dr. Joseph A. Capps, department of medicine; Dr. E. Wyllys Andrews, department of surgery; Dr. Henry F. Lewis, department of obstetrics; Dr. Channing W. Barrett, department of gynecology; Dr. H. Bascom Thomas, department of orthopedics; Dr. Clifford G. Grulee, department of pediatries; Dr. Stanton A. Friedberg, department of diseases of the ear, nose and throat; Dr. George F. Suker, department of diseases of the eye, and Dr. Frederick G. Harris, department of skin and venereal diseases, all of Chicago.

Chicago

Nurses' Home Opens.—The Home of the Training School for Nurses of the Presbyterian Hospital, erected at the cost of $365,000 as a memorial to the late Otho S. A. Sprague, was opened informally, December 31. The building is a seven-story structure opposite the hospital and connected with it by a tunnel and contains class rooms, demonstration rooms, laboratory, etc., and has accommodation for 160 nurses.

Personal.—Dr. L. Blake Baldwin has returned after a year spent as ship surgeon on transpacific steamers.——Dr. John E. Owens, for more than twenty-five years chief surgeon of the Chicago and Northwestern System, has been appointed consulting surgeon of the road and Dr. Clarence W. Hopkins has been promoted to chief surgeon.——Dr. Samuel D. Nixon was seriously injured in a collision of his motor car and a Baltimore and Ohio train at an ungnarded grade crossing, December 28.

Meeting of Alienists and Neurologists.—The Chicago Medical Society will hold its third annual conference with the alienists and neurologists of the United States, July 14 to 18. The object is to have a scientific program, including research work which will be of benefit to every physician whether in general practice or connected with an asylum or sanatorium. One day is to be devoted to a public meeting at which the prevention of insanity and the conditions causing mental defectives will be discussed. At this session resolutions will be introduced for the framing of such laws as will, in a reasonable measure, prevent these conditions, and these resolutions will be presented for consideration to the various state legislators and national governors. The Committee on What Constitutes a Modern Hospital or Asylum and What are the Duties of the State to the Physician makes the care of the insane and mental defectives a specialty, and will present its report. Superintendents and members of the attending staff of the state hospitals and sanatoriums and neurologists are invited to participate in this meeting. Communications should be addressed to the secretary, Dr. W. T. Mefford, 2129 West Madison Street.

Appropriations and Increase in Infectious Diseases.—The commissioner of health of Chicago, in presenting the budget of the requirements of the health department for the year 1914, calls attention to the fact that the financing of the various bureaus has not kept pace with the problems connected with the control of contagious diseases and the increased growth of the city. This refers chiefly to the inspection department, and the result is seen in the figures, which show an increase in practically all of the contagious diseases for the year 1913. Among the diseases which affect chiefly children, the figures for the first eleven months of 1913 are as follows: Measles, 14,986 reported cases and 286 deaths; increases over 1912 of 155 per cent. in cases, and 94 per cent. in deaths. Scarlet fever, 10,136 reported cases and 876 deaths; increases of 32 per cent. in cases and 71 per cent. in deaths. Diphtheria cases reported, 7,781; deaths, 886; increases of 24 per cent. in cases and 8 per cent. in deaths. Increases among the less fatal diseases of childhood are: 718 chicken-pox, 434 mumps and 240 German measles. Among those diseases which menace, chiefly, adult life there are notable increases as follows: typhoid fever cases reported, 1,385; deaths, 218; increase of 42 per cent. and 35 per cent. respectively. Small-pox cases reported, 67 increase; deaths show a decrease of 5. Tuberculosis cases reported, 1,772 increase; deaths, 101 increase. The respective increases are 26 per cent. and 3 per cent. Pneumonia and influenza also show slight increases. It is said that better control of milk and other foodstuffs, housing and ventilation will go a long way toward reducing these diseases to a minimum. Largely increased appropriations for 1914 have therefore been insisted on. At present Chicago spends about 1.5 per cent. of its total appropriation of $60,000,000 for health purposes, a smaller percentage than any other large city in the United States.

INDIANA

Quarantine Removed.—The Wabash Employees Hospital, Ridgeview, which has been under quarantine on account of a case of small-pox for more than a month, has been reopened.

Wishard Memorial Meeting.—At a meeting of the Indianapolis Medical Society, December 11, the session was devoted to addresses in recognition of the life and work of the late Dr. William Henry Wishard. Memorial resolutions were adopted and a committee was appointed to prepare a special memorial on the life and services of Dr. Wishard.

Tuberculosis Items.—A camp for the treatment of persons affected or afflicted with tuberculosis has been given by the commissioners of St. Joseph County as a Christmas gift to the county, covering a site of 30 acres, to which 60 acres will be added and cottages will be constructed as soon as spring opens.——Work was commenced December 12 on the construction of two tuberculosis open-air dwellings to be placed for exhibition purposes in the courthouse square at Lafayette.

Hospital News.—The balance of the funds collected in Indiana for flood sufferers, which amounted to $1,116, has been devoted toward the fund for the maintenance of a hospital in Shelbyville.——A cancer hospital is to be established in Indianapolis by the Peoples Union. There will be a free clinic in connection with the institution. Dr. Thomas C. Kennedy will be superintendent of the hospital; Dr. J. W. Duckworth, assistant superintendent, and Dr. Orvall Smiley, pathologist.

Personal.—Dr. Charles S. Woods, formerly city sanitarian of Indianapolis, has accepted the professorship of preventive medicine in the University of Iowa and moved to Iowa City, December 28, to take up his new duties.——Dr. Joseph W. Patterson, Fairmount, is reported to be critically ill with disease of the kidney.——Dr. John H. Luken, Richmond, while riding a bicycle, December 23, collided with an automobile and was painfully injured.——Dr. A. C. Shauck, Arlington, was thrown from a motorcycle, December 19, and sustained painful cuts and bruises.——Dr. Christian B. Stemen, Fort Wayne, who has been seriously ill for several months, is now reported to be convalescing.

New Officers.—Miami County Medical Society at Peru, December 26: president, Dr. Homer E. Line, Chili; secretary-treasurer, Dr. Martin A. McDowell, Peru.——Grant County Medical Society at Marion, December 24: president, Dr. Glen D. Kimball; secretary, Dr. James E. Johnson, both of Marion.——Vanderburg County Medical Society at Evansville, December 23: president, Dr. Gardner C. Johnson; secretary-treasurer, Dr. Clarence A. Hartley, both of Evansville.——Tippecanoe County Medical Society at Lafayette, December 23: president, Dr. Robert M. Campbell; secretary, Dr. Earl Van Reed, both of Lafayette.——Owen County Medical Association at Gosport, December 19: president, Dr. George L. Mitchell, Quincy; secretary, Dr. Allen Pierson, Spencer.——Elkhart Academy of Medicine, December 18: president, Dr. James A. Work, Jr.; secretary-treasurer, Dr. Hannah O. Staufft.——Clay County Medical Society at Brazil, December 18: president, Dr. Melvin H. Young, Harmony; secretary-treasurer, Dr. Frederick C. Dilley, Brazil.——Kosciusko County Medical Society at Warsaw, December 12: president, Dr. Charles A. Thomas, Leesburg; secretary-treasurer, Dr. Forrest J. Young, Milford.——Greene County Medical Society at Linton, December 18: president, Dr. Benjamin F. Chambers, Lyons; secretary-treasurer, Dr. Elias R. Mason, Bloomfield.——Laporte County Medical Society at Laporte, December 12: president, Dr. Dexter A. Buck; secretary, Dr. Harvey H. Martin, both of Laporte.——Bartholomew County Medical Association at Columbus, December 9: president, Dr. Herman H. Kamman; secretary-treasurer, Dr. Elmer U. Wood, both of Columbus.——Lake County Medical Society at Hammond, December 9: president,

John W. Iddings, Lowell; secretary-treasurer, Dr. Eldridge M. Shanklin, Hammond.——Clinton County Medical Society at Frankfort, December 4: president, Dr. John C. Robinson, Geetingsville; secretary-treasurer, Dr. Archibald Golding Chittick, Frankfort (reelected).

IOWA

Personal.—Dr. Ulysses G. Grigsby, Perry, has resumed practice after a serious illness of several weeks.——Dr. Samuel D. Tobey, Council Bluffs, who was seized with cerebral hemorrhage December 5, is said to be improving at the Jennie Edmondson Memorial Hospital.

Hospital News.—Des Moines General Hospital will open a new free dispensary this month.——The new Contagious Hospital erected by Des Moines adjoining the Small-Pox Hospital is complete, but still lacks equipment.——The tuberculosis sanatorium for Polk County at the county farm near Saylorsville, is ready for occupancy. The building will accommodate twenty patients.

New Officers.—Hardin County Medical Association at Eldora; president, Dr. Frank Siedenburg, Alden; secretary, Dr. Nathan C. Morse, Eldora.——Polk County Medical Society at Des Moines, December 23: president, Dr. Granville N. Ryan; secretary, Dr. Thomas F. Duhigg (reelected), both of Des Moines.——Decatur County Medical Society at Leon, December 12: president, Dr. Jesse S. Coontz; secretary-treasurer, Dr. William E. Lyons, both of Garden Grove.——Page County Medical Society at Shenandoah, December 18: president, Dr. Robert J. Matthews, Clarinda; secretary, Dr. B. S. Barnes, Shenandoah.——Floyd County Medical Society at Charles City, December 19: president, Dr. Charles J. O'Keefe, Marble Rock; secretary-treasurer, Dr. Charles O. Yenerich, Rockford.——Union County Medical Society at Creston, December 17: president, Dr. J. W. Fry; secretary, Dr. Thomas V. Golden, both of Creston (reelected).——Taylor County Medical Society at Bedford, December 15: president, Dr. Henry F. Dunlavy; secretary-treasurer, Dr. Clayton M. Paschal, both of Bedford.——Wright County Medical Society at Clarion, December 17: president, Dr. Thomas J. O'Toole; secretary, Dr. William C. McGrath, both of Eagle Grove.——Greene County Medical Society at Jefferson, December 11: president, Dr. George W. Kester, Grand Junction; secretary-treasurer, Dr. Benjamin C. Hamilton, Jr., Jefferson.——Washington County Medical Society at Washington, December 16: president, Dr. Marcus C. Terry, Brighton; secretary-treasurer, Dr. Clyde A. Boice, Washington.——Iowa County Medical Society at Marengo, December 11: president, Dr. Chas. F. Noe, Amana; secretary, Dr. George F. Schug, Williamsburg.——Burlington Medical Society, December 10: president, Dr. Albert C. Moerke; secretary, Dr. E. A. Hunt.

NEW YORK

Sanatoriums Wanted.—Citizens of Lyons Falls and vicinity appealed to the board of supervisors of Lewis County to take immediate steps to establish a county hospital for tuberculosis.——Chenango County is the twenty-ninth county in the state to vote for the establishment of a county hospital for tuberculosis.——The tuberculosis sanatorium established by the Metropolitan Life Insurance Company on Mount MacGregor for the care of its employees is completed and receiving its first patients. Dr. Horace J. Houk is the physician in charge of the institution.

New Officers.—Lewis County Medical Society at Lowville, December 9: president, Dr. Ira D. Spencer, Croghan; secretary, Dr. Edward N. K. Mears, Lowville.——Chautauqua Medical Association at Dunkirk, December 9: president, Dr. George F. Smith, Falconer; secretary-treasurer, Dr. Josiah W. Morris, Jamestown.——Chenango County Medical Society at Norwich, December 10: president, Dr. John D. T. Hand, New Berlin; secretary, Dr. Paul B. Brooks, Norwich.——Schoharie County Medical Society at Cobleskill December 9: president, Dr. Carolyn L. Olendorf, Cobleskill; secretary, Dr. Herbert L. Odell.

Personal.—Dr. Norman H. Soble, a member of the police commission of Elmira, has been appointed a member of the board of managers of the State Tuberculosis Hospital.——Dr. Joseph D. Craig, for fourteen years health officer of Albany, has retired from that position, and on December 30 was presented by the employees of the office with a loving cup.——A dinner was given by the physicians of Syracuse, December 30, to the outgoing health officer, Dr. David M. Totman, and the incoming health officer, Dr. Frederick W. Sears.——In the case of George E. Kusnezsky against Dr. George E. Smith, Fredonia, who was sued for $2,000 for alleged malpractice, a verdict of "no cause for action" was returned by the jury, December 24.——Dr. Arthur H. Brown, Auburn, gave a dinner to the medical profession of Cayuga County December 23 in honor of the thirtieth anniversary of his practice in the city. Dr. John D. Tripp, on behalf of the physicians present, surprised Dr. Brown by presenting him with a silver loving-cup.——Dr. and Mrs. Jacob J. Levy, Syracuse, have returned from Europe.

New York City

Cancer Laboratory Ready.—The Crocker Research Cancer Laboratory at Columbia University has been completed and turned over to the commission headed by Dr. Frances Carter Wood, which will begin its work this month. The building is three stories and a basement in height and 100 by 35 feet.

New Officers.—Caledonian Medical Society, fourth annual meeting, in Brooklyn, December 29: president, Dr. William J. Cruikshank; secretary-treasurer, Dr. Sutherland Miller, both of Brooklyn.——Medical Society of the County of Kings, ninety-third annual meeting, at Brooklyn, December 16: president, Dr. J. Richard Kevin; secretary, Dr. Burton S. Harris.

Personal.—Dr. Livingston Farrand, executive secretary of the National Association for the Prevention of Tuberculosis, has resigned to become president of the University of Colorado.——Dr. L. Emmett Holt, who was operated on for appendicitis at his home December 15, is convalescent.——Dr. Harold W. Wright, formerly of Bellevue Hospital, has located in Santa Barbara, Cal.

OHIO

Sanatorium to Be Removed.—The Cleveland City Tuberculosis Hospital is to be moved to Warrenville, where it will be conducted with other antituberculosis industries under the supervision of Dr. Robert H. Bishop, Cleveland.

Scarlet Fever in Cleveland Hospital.—There has been a severe outbreak of scarlet fever at Huron Road Hospital which necessitated the quarantining of the institution. Mr. Ray Ewark Parks, a senior student in the medical department of the Western Reserve Medical College, died from the disease December 13, and Dr. R. L. Allen, one of the house staff, a nurse and an orderly are also ill with the disease.

Personal.—Drs. Paul J. Hanzlik and Howard Lester Taylor of Cleveland have started for Europe.——Dr. James H. Hewitt, Cleveland, has been appointed resident pathologist of the Cleveland City Hospital.——Dr. Clyde E. Ford has been appointed executive head of the Cleveland Health Department and Dr. Martin Friedrich medical expert of the department.——Drs. Harry S. Davidson and James G. Grant, Akron, whose offices in the Woods Building recently burned, have opened offices in the Everett Building.——Drs. Oscar S. Cox McArthur and Clinton J. Altmaier, Columbus, have been appointed as assistant medical examiners for the Workman's Compensation Department of the State Industrial Commission.——Dr. William H. Begg, Columbus Grove, was recently operated on for goiter in a hospital in Toledo.

New Officers.—Celsus Club at Akron: president, Dr. Dell S. Bowman; secretary-treasurer, Dr. Charles E. Norris.——Barberton Medical Association: president, Dr. William A. Hansfield; secretary-treasurer, Dr. Herbert A. Rodenbaugh.——Cleveland Academy of Medicine: president, Dr. John J. Thomas; secretary-treasurer, Dr. Jacob E. Tuckerman.——Cleveland Medical Library Association: president, Dr. Benjamin L. Millikin; secretary, Dr. Henry L. Sanford.——Clermont County Medical Association at Milford, December 17: president, Dr. Frank H. Lever, Loveland; secretary, Dr. Frank A. Ireton, Newtonsville.——Richland County Medical Society at Mansfield, December 24: president, Dr. John Maglott; secretary-treasurer, Dr. Julia Lillian McBride, both of Mansfield.——Columbus Academy of Medicine, twenty-second annual meeting, December 15: president, Dr. Fred Fletcher; secretary, Dr. Roscoe R. Kahle.——Mahoning County Medical Society at Youngstown, December 16: president, Dr. Charles D. Houser; secretary, Dr. Harry E. Patrick, both of Youngstown.——Fairfield County Medical Society at Lancaster, December 16: president, Dr. George S. Courtright, Lithopolis; secretary-treasurer, Dr. Benson M. Hazelton, Lancaster.——Knox County Medical Society at Mount Vernon, December 10: president, Dr. Irvin S. Workman, Mount Vernon; secretary-treasurer, Dr. Ernest V. Ackerman, Fredericktown.——Van Wert County Medical Society at Van Wert, December 8: president, Dr. Martin Cramer; secretary-treasurer, Dr. Charles G. Church, both of Van Wert.——Greene County Medical Society at Xenia, December 4: president, Dr. Clarence G. McPherson; secretary, Dr. David E. Spahr, both of Xenia.——Drake County Medical Society at Greenville, December 11: president, Dr. Jacob C. Poling, Ansonia; secretary-treasurer, Dr. John E. Hunter, Greenville.——Hancock County Medical

V. 62
1914

Society at Findlay, December 4: president, Dr. Robert B. Taylor, Arcadia; secretary, Dr. Nelia B. Kennedy (reelected), both of Findlay. The society presented to Dr. Kennedy a silver loving cup in appreciation of her service as secretary of the organization.

Cincinnati

Library Enlarged.—The library of the Medical School of Cincinnati has been greatly increased during the past year, both by donation and purchases. It is under the charge of Miss Frances, secretary of the Medical Library of the University.

Visiting Nurses' Activities.—A movement is on foot in Cincinnati whereby the benefits of the visiting nurses may be extended to the middle class, who will be expected to pay a moderate price for services rendered.——The Visiting Nurses' Association collected $8,000 by its recent leadpencil sale.

Cincinnati Women's Medical Society.—This society, which was organized only a year ago, has grown into an active and flourishing medical body. It has in contemplation the establishment of a new lying-in hospital for the accommodation of the middle classes and it is said that the building of the Ohio Maternity Hospital may be employed for this purpose.

University Instals New Dean.—The University of Cincinnati will celebrate the installation of Dr. Christian R. Holmes as dean of the Medical College January 16. Dr. William Henry Welch, professor of pathology at Johns Hopkins University Medical School, Baltimore, and acting president of that university, will make the address of the occasion. Dr. Welch is the greatest authority in America on medical education and the object of this celebration is to call attention to the advance in the standards of the medical colleges throughout the country and especially the standards of admission thereto. During the last five years the great majority of the proprietary medical schools have been eliminated or united with the universities. The university medical college is now recognized as the highest type of medical school, and it is believed that after a few years it will be the only type in this country. Since the union of the medical colleges with the universities their standards have been greatly advanced. The first step has been to put all of the fundamental scientific departments in charge of full time professors instead of practitioners, as in the older colleges. These men devote all of their time to teaching and research work in the medical sciences. The next step was to advance the standards of admission. The Council on Education of the American Medical Association, which has led in the campaign for these improvements, now announces that sixty of the medical colleges in this country already require college preparation for entrance, and that by 1915 this number will be increased to eighty. This makes it necessary that the academic institutions shall establish courses in sciences and languages to prepare students to study medicine. In view of this situation the medical faculty of the University of Cincinnati has arranged to hold on January 17 a conference of presidents and professors of academic institutions with the deans and professors of the medical schools on the subject of preparatory medical education. Representatives of both these classes of institutions are cordially invited to attend the celebration as well as the conference. A very interesting program has been arranged, including a visitation of the new hospital and laboratories of the Cincinnati University Medical College and luncheon at the University, followed by a conference meeting and a dinner at the Business Men's Club.

OKLAHOMA

Hospital Notes.—The new State Hospital for the Insane at Vinita is rapidly nearing completion.——Physicians of Durant have completed plans for the erection of a new hospital in that city.

Tuberculosis Notes.—The Oklahoma Association for the Study and Prevention of Tuberculosis has been put in operation at Oklahoma City without capital stock by Drs. Curtis R. Day, John W. Riley and John C. Mahr.

Hospital for Indians at Lawton.—Congressman Scott Ferris has secured an appropriation of $40,000 from congress for the erection of an Indian Hospital at Lawton, to be maintained by the interest on $275,000 recently obtained from the sale of tracts of Indian lands in Kiowa, Comanche, Apache and Wichita reservations in the state.

Personal.—Dr. William R. Bevan, Oklahoma City, is spending Drs. Littleton A. Newton and C. B. Parker, Guthrie, have been appointed as examiners of the public school pupils of Guthrie.——Dr. Edward D. James, Haileyville, has been appointed physician of Pittsburg County, vice Dr. H. E. Williams, removed.——Dr. and Mrs. Walter M. Jones, Enid, were the guests of honor at a banquet, December 12, given by the members of the Garfield County Medical Society.——Dr. and Mrs. Jones have left for San Francisco.

New Officers.—Kay County Medical Association at Blackwell, December 10: president, Dr. H. M. Stricklen, Tonkawa; secretary-treasurer, Dr. Edgar J. Orvis, Blackwell.——Muskogee Medical Society, December 8: president, Dr. J. Hutchings White; secretary-treasurer, Dr. Benjamin H. Brown.——Pittsburg County Medical Society at McAlester, December 4: president, Dr. James C. Johnston; secretary-treasurer, Dr. Leonard S. Willour, both of McAlester.——Grady County Medical Society at Chickasha, December 5: president, Dr. Robert J. Baze; secretary, Dr. William H. Cook, both of Chickasha.

PENNSYLVANIA

New Officers.—Columbia County Medical Society at Bloomsburg, December 12: president, Dr. Joseph Cohen, Berwick; secretary-treasurer, Dr. Luther B. Kline, Catawissa (reelected).——Shamokin Medical Society, December 12: president, Dr. Clarence M. Malone; secretary, Dr. Henry T. Simmonds.

Home for Incurables Recommended.—In the annual report of General Agent Wharton to the State Board of Public Charities he recommends that serious consideration be given to the establishment of a state institution especially devoted to the care of incurable diseases, such as cancer and other wasting disorders.

Personal.—Dr. J. R. Burns, Luzerne, has been appointed a member of the staff of the Scranton State Hospital.——Dr. John C. McMillen, Barnesboro, who has been ill for several months with nephritis at the Spangler Hospital is reported to be improving.——Dr. Joseph S. Kowaleski, Shamokin, who has been seriously ill at the Jefferson Hospital, Philadelphia, with septicemia, due to an operation wound, has returned home convalescent.

New Hospital for Pittsburgh.—Contracts for the erection of the New Elizabeth Steel Magee Hospital, memorial of the late Hon. Christopher L. Magee to his mother, were let December 21. The building will be erected on a 10-acre lot, and will consist of a central building with five wings, each four stories in height, and will accommodate 120 adult patients in wards, twenty-one in private rooms and about eighty babies. The contract price is $600,000, and the equipment will necessitate the expenditure of at least an additional $50,000. The hospital will be chiefly for maternity cases, but will also have a well-equipped gynecologic department. Dr. Charles Edward Ziegler is to be director of the hospital.

Spring City Home to Treat Girls.—The newly elected officers and directors of the Eastern Pennsylvania State Institution for Feeble-Minded and Epileptics, Spring City, have adopted plans for the erection of two new buildings, for the care of girls under 21 years of age. This institution, organized in 1907, was originally intended to accommodate boys and girls, but the old board decided it would first take care of boys. The two new buildings for the exclusive use of girls will be built on the college plan with connecting corridors and subways, and will accommodate two hundred and twenty patients. The board also took over an adjoining farm of 70 acres, making 181 acres purchased since Jan. 1, 1913, now giving the institution a total of 470 acres. The last legislature appropriated $579,450 for the institution.

Philadelphia

Eugenics Law Does Not Decrease Marriage.—The new eugenics marriage law had no deterring influence on the number of marriages in this city, as there were 16,122 licenses issued in Philadelphia during 1913, as compared with 15,365 in 1912.

Rush Society Lecture.—The sixth Rush Society lecture will be delivered by Prof. Dr. Sven G. Hedin of the University of Upsala, Sweden, at the College of Physicians, Twenty-Second and Chestnut Streets, January 27, at 8:30 p. m., on "Colloidal Reactions and Their Relations to Biology."

Coroner's Statistics.—According to the records of the coroner's office there was an average of one murder in every five days during the year 1913. Forty-eight persons were killed by automobiles and three deaths resulted from motorcycle accidents. There were sixty-six deaths from trolleys and eighty-six lives were lost in railroad accidents.

Bureau of Health Report.—Vital statistics of the Department of Health for the year 1913 show that the number of deaths from all causes were 25,602, as compared with 24,215 in the year previous, thus increasing the death rate from 15.08 to 15.69 per 1,000. Tuberculosis caused the greatest number of deaths. The total number of communicable diseases reported was 35,457, as compared with 23,170 in 1912.

Personal.—Dr. Joseph S. Neff, director of the Department of Public Health and Charities, who has been ill for several days, is reported to be improving.——Dr. Charles S. Hirsch has been appointed urologist at Mount Sinai Hospital and genito-urinary surgeon to the Lebanon Hospital.——Dr. Charles W. LeFever has been appointed ophthalmologist to the Mount Sinai Hospital.——Dr. William W. Keen was elected president of the American Philosophical Society, January 2.

Fund for Cancer Study.—Mrs. Lucy Henderson of New Castle, Pa., has donated a sum to the Jefferson Hospital, the income of which is to be used in studying cures for cancer with special emphasis on the use of radium. The yearly income will approximate $3,500 and the fund will be known as the Lucy Henderson Foundation. The work of investigation for which the donation has been made will be carried on under the direction of Drs. J. Chalmers DaCosta, W. M. Late Coplin and Hobart Amory Hare.

New Officers.—Philadelphia Medical Examiners' Association: president, Dr. Foster K. Collins; secretary, Dr. J. Lawrence Eisenberg, Norristown.——West Philadelphia Medical Association: president, Dr. Christian B. Longenecker; corresponding secretary, Dr. Henry G. Munson.——Northern Medical Association: president, Dr. Thomas Shriner; secretary, Dr. Victor A. Loeb.——Southeastern Branch of the Philadelphia County Medical Society: chairman, Dr. Simon Wendkos; clerk, Dr. Morris Ginsburg.——Section on Otology and Laryngology of the College of Physicians: chairman, Dr. George Morley Marshall; clerk, Dr. Benjamin B. Parish.——Germantown Branch of Philadelphia County Medical Society, December 22: chairman, Dr. Harry B. Wilmer.

TEXAS

Personal.—Dr. Henry Winston Harper, professor of chemistry in the University of Texas, Austin, was made first dean of the graduate department, December 10.——Dr. Joseph B. McKnight, Brady, on December 17, was appointed superintendent of the State Tuberculosis Sanatorium, Carlsbad, vice Dr. Bascom Lynn, resigned.

New Officers.—Hardeman County Medical Society at Quanah, December 26: president, Dr. John J. Hanna; secretary-treasurer, Dr. Thomas D. Frizzell, both of Quanah.——Bexar County Medical Society at San Antonio, December 18: president, Dr. Charles D. Dixon; secretary, Dr. W. H. Hargis.——North Texas District Medical Association, sixty-eighth annual meeting, at Fort Worth, December 9 and 10: president, Dr. K. Herberden Beall, Fort Worth; secretary, Dr. H. Leslie Moore, Dallas.——Tarrant County Medical Association at Fort Worth, December 22: president, Dr. Samuel A. Woodward; secretary, Dr. Frank G. Sanders (reelected), both of Fort Worth.——Annis Physicians' Club, organized December 19: president, Dr. Charles H. Breuer, Waco; secretary, Dr. Walter P. McCall, Ennis.——Ellis County Medical Society at Waxahachie: president, Dr. Zachary R. Bundy, Austin; secretary-treasurer, Dr. Edgar F. Gough, Waxahachie.——Pecos, Ward and Reeves Counties Medical Society at Pecos, December 14: president, Dr. William H. Benway; secretary, Dr. Otis J. Bryan, both of Pecos.——Hunt County Medical Association at Greenville, December 16: president, Dr. D. Richard Waddle, Greenville; secretary, Dr. Harry M. Bradford.——McLennan County Medical Society at Waco, December 2: president, Dr. James M. Witt; secretary-treasurer, Dr. Doyle L. Eastland, both of Waco.——Dallas County Medical Society at Dallas, December 1: president, Dr. Calvin R. Hannah; secretary, Dr. Royal S. Loving (reelected).

GENERAL

American Medical Association.—The annual session of the American Medical Association for 1914 will be held in Atlantic City. The House of Delegates will convene on Monday, June 22, and the Scientific Assembly—the sections—on June 23.

Fraternity Election.—The grand chapter of the Phi Chi Medical Fraternity, at its meeting in St. Louis, December 31, selected Richmond, Va., as the next place of meeting and elected the following officers: presiding senior, Dr. Charles H. Hibbitt, Louisville, Ky.; presiding junior, Dr. Paul Maher, St. Louis; secretary-treasurer, Dr. Dunning S. Wilson, Louisville, Ky., and editor-in-chief of the Phi Chi Quarterly, Dr. T. B. Pearson, Wilmore, Ky.

Bequests and Donations.—The following bequests and donations have recently been announced:

Frisbie Memorial Hospital, Rochester, N. H., about $25,000 for the endowment of a hospital by the will of Dr. J. F. Frisbie, Newton, Mass.

Jefferson County (Ala.) Antituberculosis Association, $2,500 to be used in an organized effort to relieve tuberculosis in Jefferson County by the will of Wilson R. Brown.

Various Jewish charitable institutions of Philadelphia, $2,300 by the will of the late Judith L. Freshle.

We Repeat This Warning.—At this time of the year the ubiquitous subscription swindler is abroad working a nefarious game in making collections from unsuspecting victims, as payment for new and renewed subscriptions to THE JOURNAL. Information has been received that certain individuals are working the medical profession in Ohio, Indiana, Tennessee and Kentucky. By next week these swindlers will probably have migrated to some other territory. Our readers are therefore cautioned to pay money to no one unless the proper credentials are produced. Letters of authority bearing the signature of George H. Simmons and the official seal of the American Medical Association are supplied to the A. M. A.'s representatives. The holders of such letters are the only ones authorized to make collections. Information by telegraph regarding any of these swindlers will be welcome.

A Tennessee physician describes a certain Walter Thorne, claiming to be our agent in Tennessee, but of whom we have no knowledge, as follows: About 5 ft. 10 in., slender, age 22 years, black hair and black eyes. Extremely immature and boyish looking. Slight defect in speech due to absence of right upper median incisor tooth; left upper incisor tooth replaced by gold tooth.

Biologic Federation Meeting.—At the annual meeting of the Federation of American Societies for Experimental Biology, an organization which includes the Physiological Society, the Society of Biological Chemistry and the Society for Pharmacological and Experimental Therapeutics, held in Philadelphia, December 21 to 31, the following officers were elected: president, Dr. Graham Lusk, New York City; vice-president, Dr. Carl Alsberg, Washington, D. C.; secretary, Dr. P. A. Shaffer, St. Louis; treasurer, Dr. D. D. Van Slyke, New York City, and councilors, Prof. J. J. Abel, Baltimore, and Prof. A. B. Macallum and Dr. T. B. Osborne, New Haven, Conn.—— Of the component societies, the Physiologic Society elected Dr. W. B. Cannon, Harvard, president; Dr. A. J. Carlson, Chicago, secretary, and Dr. J. Erlander, St. Louis, treasurer; the Biological Society elected Dr. R. M. Morse, Philadelphia, president; Surgeon John F. Anderson, U. S. P. H. S., Washington, D. C., vice-president; Dr. George H. Whipple, Baltimore, secretary-treasurer, and Drs. Harvey Cushing, Boston, and David Marine, Cleveland, councilors; the Pharmacological Society elected Dr. Torald Sollmann, Cleveland, president; Dr. J. Auer, New York City, secretary; Dr. W. DeB. MacNider, New York City, treasurer, and Dr. Reid Hunt, New York City, chairman of the membership committee.

Resolutions on Animal Experimentation.—At its meeting in Philadelphia, December 31, 1913, the Federation of American Societies for Experimental Biology adopted the following resolutions:

1. We, the members of the Federation of American Societies for Experimental Biology—comprising the American Physiological Society, the American Society of Biological Chemists, the American Society for Pharmacology and Experimental Therapeutics, and the American Society for Experimental Pathology—in convention assembled, hereby express our accord with the declaration of the recent International Medical Congress and other authoritative medical organizations, in favor of the scientific method designated properly animal experimentation but sometimes vivisection.

2. We point to the remarkable and innumerable achievements by means of animal experimentation in the past in advancing the knowledge of biological laws and devising methods of procedure for the cure of disease and for the prevention of suffering in human beings and lower animals. We emphasize the necessity of animal experimentation in continuing similar beneficent work in the future.

3. We are firmly opposed to cruelty to animals. We heartily support all humane efforts to prevent the wanton infliction of pain. The vast majority of experiments on animals need not be and, in fact, are not accompanied by any pain whatsoever. Under the regulations already in force, which reduce discomfort to the least possible amount and which require the decision of doubtful cases by the responsible laboratory director, the performance of those rare experiments which involve pain is, we believe, justifiable.

4. We regret the widespread lack of information regarding the aims, the achievements and the procedures of animal experimentation. We deplore the persistent misrepresentation of these aims, achievements and procedures by those who are opposed to this scientific method. We protest against the frequent denunciations of self-sacrificing, high-minded men of science who are devoting their lives to the welfare of mankind in efforts to solve the complicated problems of living beings and their diseases.

V. 62
1914

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Dec. 20, 1913.

The Health of Schoolchildren

The annual report for 1912 of the chief medical officer of the board of education has just been issued. It contains an exhaustive account of the measures which are being taken throughout the country to safeguard the health of schoolchildren. Uncleanliness still occupies a large share of the time and energy of the officers of the school medical service, but the returns show a decided and progressive improvement, and the grosser forms of uncleanliness are now rare as compared with the conditions that prevailed when medical inspection was instituted in 1908. There are about six million children in the public elementary schools. About 10 per cent. suffer from serious defects of vision. Among the causes given are heredity, early eye-strain, defective lighting, infectious diseases and neglect in obtaining early medical advice. From 1 to 3 per cent. suffer from defective hearing; from 1 to 3 per cent. have suppurating ears; about 10 per cent. have adenoids, inflamed tonsils or enlarged cervical lymph-nodes requiring surgical treatment; 1 per cent. have ringworm; 1 per cent. suffer from tuberculosis of readily recognizable form; from 1 to 2 per cent. have heart-disease; from 30 to 40 per cent. have unclean heads or bodies, and more than half the children are in need of dental treatment.

In five directions school hygiene has undergone evolution. There has been a steady improvement in the routine work of medical inspection, and ancillary undertakings. There is less "leakage," more following up and more accurate clinical examination. Secondly, there is fuller differentiation of abnormal children and a tendency on the part of authorities to modify the school curriculum in their behalf. Much time and labor are now being devoted to mentally defective, tuberculous, stammering, and frail or retarded children. Thirdly, there has been an enlargement of the conception of the sphere of influence of the school medical officers. Education authorities are finding that though they have been appointed in the first place merely to inspect children, they may fill a very useful place in the educational system. Fourthly, there has been a marked advance in respect of medical treatment both in quality and in quantity. Lastly, the intimate relation between school hygiene and education is becoming recognized and its application understood. The equipment of the school, the character of the teacher, the importance of physical exercise and manual work, the relation of the leaving child to the national insurance system, to industrial employment, to further education in secondary schools, and to its own home life, are now receiving attention. Thus the school medical work and the issues arising therefrom are beginning to form an integral part of our educational system.

Actinomycosis in Ox-Tongues Imported from Argentina

Dr. W. J. Howarth, health officer of the city of London, and Dr. H. Williams, health officer of the port of London, have issued an interesting report on actinomycosis in ox-tongues imported from Argentina. These tongues arrive in a frozen condition at the rate of 10,000 per week. About 5 per cent. were found to be diseased. The lymph-nodes were more frequently affected than the blades of the tongue. The lesions were fairly characteristic and the area involved by a single nodule varied in size from a pea to a five-shilling piece. The health officers conclude that actinomycosis is wide-spread in cattle in Argentina and that the supervision exercised to prevent the exportation of affected organs is inadequate. As a large percentage of the affected tongues showed the disease in the lymph-nodes alone, they recommend that these should be left attached to the tongue and not removed, as is sometimes done, when it is impossible to determine whether or not the tongue has come from an infected animal. From a review of the literature of the subject they have come to the conclusion that the question of actinomycosis in cattle and even the prevalence of the disease in general have not been adequately investigated.

Electricity and Radium in Agriculture

Mr. T. Thorne Butler has given an interesting lecture before the Royal Society of Arts on the application of electricity and radium in agriculture. He said that a great deal of experimental work was going on now with radio-active material, which gave in some cases such remarkable results that radium must be taken into serious consideration from an agricultural point of view. The residues resulting from radium extraction, which contained only a milligram or two of radium to the ton, and were at present regarded as of negligible value, were sufficiently active to produce marked effects on germination and greatly to increase the size of the plants and crops. In some cases an increase of 300 and 400 per cent. had been obtained. The stimulating effects of a new type of combined high-frequency and positive electricity apparatus on young chickens was also described. Not only was the loss of the very young birds during the first few days after hatching in incubators minimized, but the chickens grew at more than twice the normal rate, thus costing less than half the usual amount to grow.

Scarcity of Physicians in South Africa

In a previous letter to THE JOURNAL it was pointed out that, whatever its defects, the national insurance act has greatly improved the financial position of physicians engaged in industrial practice, and that consequently there was a great falling off in the applicants for official appointments, even when advertised at greatly increased salaries. The effect has not been confined to the United Kingdom but has spread to our nearest important colony, South Africa. In an editorial article in the *South African Medical Record* it is pointed out that a short time ago when a minister of the government received a deputation from district surgeons asking for improved conditions of service his reply was that "every district surgeoncy is at once applied for by any number of doctors under the present conditions." Now the state of affairs is exactly the reverse. The demand for physicians in South Africa is in excess of the supply, particularly outside the larger centers of population. The government has the greatest difficulty in filling, even temporarily, junior appointments, despite increased remuneration. Many of them have been advertised for months. Moreover, the demand for the purchase of practices, except in exceptional cases, is practically nil. This condition has been brought about by several causes. The country has recovered from the war and there has been a general increase in the financial condition of the people and consequently in their capacity to pay a doctor. In the Rand, one of the wealthiest places in the world, the advances are so great that there are unexampled facilities for a young physician without capital to jump after the slightest preliminary stage of a hospital resident or an assistant into an ample competence. Thus men are attracted here from other parts of South Africa which are left bare. There is the further factor that the improvement in industrial practice in Great Britain, referred to above, has to a great extent cut off the recruiting ground for South African physicians.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Dec. 26, 1913.

Complementary Medical Instruction

At its last session the superior commission on medical instruction framed a bill intended to organize a system of complementary medical instruction. It is intended for students about to take their degrees, doctors desirous of keeping up with the progress of medical science and for foreign physicians and students. It will include lectures, lessons and laboratory work. Dr. Le Gendre, a physician of the Lariboisière Hospital, suggests that much of the course be devoted to the study of social laws in relation to medicine. School physicians and physicians whose practice is concerned with industrial accidents will obtain aid from such instruction. The decree organizing this course will soon be submitted to the president of the republic.

Compulsory Antityphoid Vaccination in the Army

Dr. Léon Labbé, who is a senator, recently proposed a bill to make antityphoid vaccination compulsory in the army. The Senate on December 19 passed the bill, making it apply to the active army and applicable to the reserves by ministerial decree. The bill was sent to the Chamber of Deputies, December 20, and there sent to the army committee, which will soon report. It has already elicited severe criticism. Dr. L. Granjux in the *Bulletin médical* has pointed out the inconvenience of compelling a soldier to submit to a vaccination which is not obligatory on other French citizens of the same age. There are, indeed, precedents. Formerly, vaccination and revaccination against small-pox were compulsory in the army, while similar proceedings were optional for the civil population; but the law with regard to public hygiene removed this distinction between the civil and military population. Compulsory antityphoid vaccination appears necessarily inoperative to Granjux. No one would ever dare to call before a

court martial a soldier who had refused to be vaccinated against typhoid, and, in any case, he would be acquitted. If a soldier, who is in most cases a minor, were to produce a certificate from his father declaring that he was opposed to antityphoid vaccination on his son, what would be the situation of the army physician whose duty it was to vaccinate him? It seems, however, impossible to extend antityphoid vaccination to all branches of the army. Professor Vincent, indeed, has taken care to specify that vaccination should be performed only on healthy subjects. The successes which he has reported recently are due in part to this selection; and certainly his statistics would be less inviting if antityphoid vaccination should be practiced among all soldiers, for not only bad risks would be encountered, but also opposition. While optional antityphoid vaccination is gaining ground in the army constantly, it is to be feared that as soon as it becomes compulsory it will elicit opposition and hitherto unknown bad results. It is to be feared, moreover, that if antityphoid vaccination were made compulsory, the garrison cities where typhoid is endemic would regard such hygienic measures as purification of water and improvement of drainage as useless since the inhabitants were protected from the disease by vaccination. To make antityphoid vaccination compulsory in the army, in the opinion of Granjux, would risk the progress of social and public hygiene in France.

The Causes of Mortality in France

The director of public charities and hygiene has just handed in to the minister of the interior his report on the sanitary situation of France in 1911. The death-rate for this year was high in France as in other countries. The total number of deaths was about 775,088, an average of about 1,959 deaths per hundred thousand inhabitants and an increase of 70,318 over the figures of the previous year, which, however, were exceptionally low. The excess of deaths representing the difference between the two years was composed as follows, according to the age of the decedents:

From 0 to 1 year	30,172 deaths
From 1 to 19 years	7,061 deaths
From 20 to 39 years	3,951 deaths
From 40 to 59 years	2,724 deaths
From 60 years and over	26,410 deaths

The mortality in 1911, thus, was particularly large among infants and old persons. The principal cause of the infant mortality was enteritis due to the exceptional heat of the summer. Typhoid fever in 1911 increased, causing an excess of 1,324 deaths over the average of previous years. There were 5,283 deaths due to typhoid, or 133 per ten thousand inhabitants. The heat of the summer affecting the sources of drinking-water was one of the causes of the increase of typhoid. The place occupied by cancer in the annual total of deaths continues to increase regularly and disquietingly in France as elsewhere. Cancer in 1911 had more victims than all epidemic diseases put together (31,768 against 29,470). The tuberculosis situation is also disquieting. Tuberculosis causes one-eighth of the total of deaths especially among persons between 20 and 40 years of age. At these ages 44 out of 100 deaths are due to tuberculosis.

Jubilee of the French Society of Stomatology

The Société de stomatologie française, December 13, under the presidency of Professor Landouzy, dean of the Faculté de médecine de Paris, celebrated the twenty-fifth anniversary of its foundation.

Death of Dr. Louis Jullie

Dr. Louis Jullien, surgeon of the Maison de Saint-Lazare, has just died, aged 63, after a long and painful illness. His "Treatise on Venereal Diseases," which appeared about thirty years ago, was crowned by the Académie des Sciences, the Académie de médecine and the Faculté de médecine de Paris, and was translated into several foreign languages. When the first edition appeared and for a long time thereafter it was the best book on the subject.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Dec. 19, 1913.

Physicians and the Krankenkassen

The serious difficulty with the Krankenkassen under the new medical insurance legislation, when the present contracts expire January 1, shows some prospect of being settled. The medical departments of the German universities have once more made the attempt through three representatives of the Berlin faculty, Professors Kraus, Orth and Passow, to secure through the secretary of state for the interior, a higher interest of the government in the affairs of physicians than hitherto, and to urge the secretary to an attempt at reconciliation between the representatives of the medical profession and those of the insurance societies. A proposal for mediation was presented to-day by the government to the Leipsic League through the three university professors, and this proposal of the government will be taken up within a few hours by the management of the Leipsic League in order to determine its practicability. Without doubt concessions must be made by both sides in order to secure peace. I think there is no reason to doubt the readiness of the profession for this step, but it is doubtful whether the managers of the Leipsic League may not find the sacrifice which will be required of the medical profession too great. The next few days will decide the matter.

In comparison with this important matter, all the other information with regard to the approaching trouble, which has been received from various parts of Germany, is of minor importance. I will only mention as worthy of note that the Berlin Medical Society, the largest medical society in Germany, took the position the day before yesterday that the acceptance of a closed position as insurance physician is not compatible with membership in the Berlin Medical Society. According to this, a member who transgresses this resolution may be expelled from the society, which would discredit such a physician before the public. [The Leipsic League publishes weekly the list of "closed" positions, that is, those in which the insurance company offers terms altogether unfair and unworthy of the profession.]

Loan Offered for Purchase of Radium

A few days ago a conference took place in the department of the interior, under the presidency of the director of the Prussian Medical Bureau, of the representatives of numerous communes of greater Berlin, which was called at the request of Professor His, the director of the Radium Institute of the Charité. It was announced that certain insurance companies, the Landesversicherungsanstalten of Berlin and Brandenburg, had stated that they were ready to place at the disposal of the communes of greater Berlin a capital of $125,000 (500,000 marks), at a relatively low rate of interest, for the purchase of 2 grams of radio-active substances. The right is reserved to the communes participating to collect fees for radium treatment from patients who are able to pay. The representatives of the communes gave their consent, but the final decision naturally lies with the various communal corporations.

Small-Pox Research

The sum of $10,000 (50,000 marks) is to be appropriated by the Reichstag to the Imperial Health office for new investigations on small-pox, especially work on obtaining vaccine material from pure cultures according to the process published by Staff-Surgeon Fornet of this city. Other questions connected with small-pox are to be studied, such as the difference between the germ of human small-pox and that of vaccinia and of the small-pox of the horse and some other animals.

The Physicians of Germany in 1913

According to Professor Schwalbe's Medical Directory for Germany for 1914, the number of physicians in Germany in 1913 was 34,136. Compared with the population, 66,835,000, this gives 5.11 physicians per 10,000 inhabitants. About 100 physicians must be subtracted who practice at the health resorts in summer and other cities in winter, and therefore are reckoned twice. The number of physicians in Germany has increased since 1901 from a proportion of 4.92 to 5.11 per 10,000 inhabitants. In addition, there are 168 ship surgeons and 163 physicians in the German colonies. About 500 physicians are lost to Germany annually through death and emigration. The number of licenses and the number of medical students is continually increasing. In 1916, 2,000 young physicians may be expected to enter the profession. The physicians are unusually numerous in the large cities, the proportion being 9.6 per 10,000 inhabitants in the large cities with a total of about 15,000,000 inhabitants as compared with 3.8 per 10,000 inhabitants in the rest of Germany with a total population of over 51,000,000. It is estimated that there are in greater Berlin 11.09 physicians per 10,000 inhabitants. Wiesbaden has 28 physicians per 10,000 inhabitants, while the town of Hamborn has only 2.3. The number of women practitioners is steadily increasing, there being 151 in 1912 and 195 in 1913. They prefer to settle in the large cities. A similar increase is observed in the number of specialists.

V. 6
1914

Deaths

Silas Weir Mitchell, eminent as a neurologist, and universally known as a writer of historical novels dealing mostly with the times of the Revolutionary and Civil wars; a medical power in Philadelphia; honored for his attainments the world over; died at his home in Philadelphia, January 4, from influenza, aged within six weeks of 85.

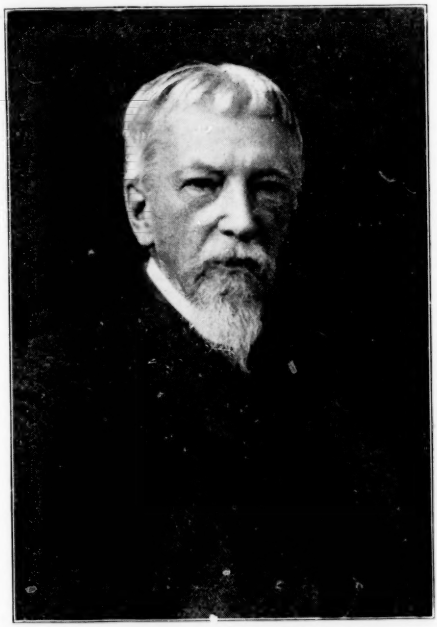
He was born in Philadelphia, February 15, 1829, the son of Dr. John Kearsley and Matilda (Henry) Mitchell. His preliminary education was obtained in the grammar schools of Philadelphia and the University of Pennsylvania. He was obliged to leave the latter institution in his senior year on account of ill health. His medical course was taken at Jefferson Medical College, from which he graduated in the class of 1850. He at once commenced practicing in Philadelphia, devoting especial attention to physiologic subjects. In 1862 he entered the army as Assistant Surgeon of Volunteers and served until the end of the war, during this period doing valuable research work on gunshot wounds and the nervous disorders resulting therefrom.

Early in his career his literary work commenced and the titles of his scientific articles alone number more than one hundred. About 1882, Dr. Mitchell entered on his career as a writer of fiction. Many of his works, such as, "In War Time," "Roland Blake" and "Westways," his latest production, dealt with the times of the Civil War, while the scene of "Hugh Wynne, Free Quaker" was set in Philadelphia during the Revolutionary War. In addition to these more ambitious works, Dr. Mitchell was a prolific writer of short stories, most of which dealt with some particular phase of neurology or neuropathic conditions. His writings, both scientific and imaginative, are fascinating; his style is polished, his diction finished.

Dr. Mitchell was a Fellow of the American Medical Association and Chairman of the Committee on Memorial to Medical Officers who died in the Civil War; a fellow and once president of the College of Physicians of Philadelphia; a member and president in 1908 of the American Neurological Association; a member of numerous scientific societies, both American and foreign; a trustee of the University of Pennsylvania and of the Carnegie Institute, Washington. He was the recipient of many honorary degrees from noted institutions. These include the honorary degree of Doctor of Medicine conferred on him by the University of Bologna and the degree of LL.D. conferred by Harvard University in 1886, by the University of Edinburgh in 1885, by Princeton University in 1896, by the University of Toronto in 1906 and by Jefferson Medical College in 1910.

Dr. Mitchell was the first to institute "the rest cure" for neurasthenia, which became a recognized and valuable method of treatment, and is known the world over by the name of its originator.

Despite his advanced age, Dr. Mitchell retained, almost to the last, his physical vigor, and to the last, his mental acumen and literary ability. His last published work, "Westways," which dealt with the Civil War and which appeared in 1913, shows no diminution of interest or flagging in the charm of his writing.



SILAS WEIR MITCHELL, 1829-1914

Alfred E. M. Purdy, M.D. College of Physicians and Surgeons, New York City, 1861; assistant surgeon of volunteers during the Civil War; from 1870 to 1880, surgeon and chief surgeon of the Metropolitan police of New York City; a member of the Medical Society of the State of New York and New York Academy of Medicine; one of the organizers and consulting surgeon of the Methodist Episcopal Hospital, Brooklyn; for many years editor of the *Medical Register;* died at his home in New York City, December 25, aged 75.

Thomas Edge Parke, M.D. University of Pennsylvania, Philadelphia, 1871; for five successive terms chief burgess of the borough of Downingtown, Pa.; a member of the Board of Health of Downingtown; president of the Dime Savings Bank at Chester County, and manager of the Chester County Hospital since its organization; died at his home in Downingtown, December 12, aged 62.

Frederick Gaston Kolb, M.D. Medico-Chirurgical College of Philadelphia, 1908; a native of Bahia, Brazil, and a specialist in bacteriology and pathology of Hamburg, Pa.; died at the home of his aunt in Welch, W. Va., about December 16, from heart disease, aged 28.

George W. Van Zandt, M.D. Rush Medical College, 1867; for several years a practitioner of Charlotte, Iowa, and later a banker of Chicago; died at his home in the latter city, December 21, aged 80.

Felipe Martinez, M.D. National Medical School, Mexico, 1870; surgeon in the Mexican Army for many years; died at his home in San Francisco, December 10, from myocarditis, aged 72.

Elijah Marion Heflin, M.D. Keokuk (Ia.) Medical College, 1892; of Calmar; a member of the Iowa State Medical Society; died in Grand Island, Neb., December 20, aged 51.

John Wesley Lanius, M.D. Missouri Medical College, St. Louis, 1869; of Palmyra, Mo.; died in the Levering Hospital, Hannibal, Mo., October 15, from arteriosclerosis, aged 71.

William James Kornegay, M.D. College of Physicians and Surgeons, Baltimore, 1893; died at his home in Mount Olive, N. C., December 12, from cerebral hemorrhage, aged 47.

William H. Gowan, M.D. Detroit Medical College, 1875; proprietor of a sanatorium in Detroit; died at his home in that city, December 16, from heart disease, aged 59.

Thomas Judson Wright, M.D. George Washington University, Washington, D. C., 1870; Bellevue Hospital Medical College, 1871; of Churchland, Va.; died in St. Christopher's Hospital, Norfolk, Va., December 15, from complications resulting from a fracture of the hip, two weeks before, aged 68.

James Parker Stedman, M.D. Boston University, 1882; a member of the consulting staff of the Boston University Hospital and formerly president of the Brockton Medical Society and Massachusetts Surgical Society; died at his home in Brockton, December 24, aged 56.

Edward Wirt Lamoreaux, M.D. University of Michigan, Ann Arbor, 1879; for two years instructor in anatomy in his alma mater; died suddenly at his home in Battle Creek, from acute dilatation of the heart, December 18, aged 59.

George F. Parsons, M.D. College of Physicians and Surgeons, Chicago, 1886; for many years a practitioner of Chicago; died at the home of his daughter in Peoria, Ill., December 29, from cerebral hemorrhage.

Arthur Avelard Brown, M.D. Trans-Mississippi Medical College, 1880; a fellow of the American Medical Association and secretary of the Louisiana State Board of Medical Examiners; died in Shreveport, La., December 1, aged 52, from cerebral hemorrhage.

Asa Lowe Lange, M.D. College of Physicians and Surgeons, New York City, 1871; a fellow of the American Medical Association; professor of diseases of the skin and genito-urinary diseases in the North Western University Medical School; author of numerous contributions to medical literature; died in Chicago, December 2, from cerebral hemorrhage, aged 67.

John Franklin Finnie, M.D. Detroit Medical School, 1861; member of the Massachusetts Medical Society; member of the Medical Council of Canada; died at his home in East Hamilton, Ont., December 2, aged 75.

Karl Arthur Loehers, M.D. College of Physicians and Surgeons, Chicago, 1910; a fellow of the American Medical Association; member of the Missouri and Wisconsin State Medical Societies; was assistant superintendent of the Wisconsin General Hospital, Wauwatosa, Wis.; died in the home of the parents in Jessica Falls, Minn., December 6, from chloroform narcosis, a preparatory anesthetic which was unavailing, aged 29.

Charles Sumner Little, M.D. Johns Hopkins University, Baltimore, Md., 1899; lecturer in pathology and director of pathology in the medical department of Syracuse University; pathologist to the Auburn City Hospital and physician to the Ira Sprague Home for the last six years; in charge of the U. W. Little Coal Companies' mines at Watertown, Ind., died at the home of his sister, December 15, from heart disease, aged 40.

Eugene Martinsale Hermance, M.D. College of Physicians and Surgeons, New York City, 1870; a member of the Medical Society of the State of New York; first commissioner of public safety of Yonkers; a member of the Board of Education and president of the Board of Health; consulting physician to St. Joseph's Hospital; died at his home, December 22, from pneumonia, aged 59.

Michael C. Jordan, M.D. Eclectic Medical Institute, Cincinnati, 1870; Medical College of Ohio, Cincinnati, 1879; of Logansport, Ind.; a director in several banks in the city; coroner of Cass County from 1886 to 1888; died in Johns Hopkins Hospital, Baltimore, December 12, a day after an operation for malignant disease of the stomach, aged 58.

Preston Henry O'Connor, M.D. Long Island College Hospital, Brooklyn, 1898; a member of the Vermont State Medical Society and a member of the staff of the Brattleboro Memorial Hospital since its organization; local surgeon of the Boston and Maine Railroad; died suddenly at his home in Brattleboro, December 25, from angina pectoris, aged 46.

William E. Severin, M.D. University of Southern California, Los Angeles, 1899; a member of the Board of Education in Los Angeles from 1907 to 1909; a member of the staff of the Pacific Electric Railroad and chief medical examiner of the Prudential Life Insurance Company; died at his home, December 16, from pneumonia, aged 44.

Walter Morton Holladay, M.D. Hospital College of Medicine, Louisville, 1885; a Fellow of the American Medical Association; an alumnus of Hampton-Sidney College, Va., and for more than ten years college physician and supervisor for the Hampton district; died at his home in Hampton-Sidney, December 21, from nephritis, aged 49.

Bartholomew John Leahy, M.D. Rush Medical College, 1893; for several terms president of the Dixon-Dakota County (Neb.) Medical Society; died at his home in Jackson, December 17, from angina pectoris and chronic nephritis, aged 43.

Francis M. Pickens, M.D. Rush Medical College, 1870; one of the oldest practitioners of Winfield, Kan.; a veteran of the Civil War; died in his office in Winfield, December 17, from accidental gas asphyxiation, aged 72.

Hartwell Isaac Williams, M.D. University of Mobile, Ala., 1887; a member of the Medical Association of the State of Alabama, died at his home in Columbiana, December 21, from rheumatism, aged 60.

William Samuel Talmage, M.D. College of Physicians and Surgeons, Baltimore, 1867; [illegible] member of the Medical Society of the State of Pennsylvania; died at his home in Gettysburg, Pa., December 1, from cerebral hemorrhage, aged 72.

Thomas Ryan Gratton, M.D. [illegible] Medical College, St. Louis, Mo., 1884; [illegible] a member of the staff of the Missouri Pacific Railroad; died suddenly at his home in St. Louis, December 2, from cerebral hemorrhage, aged 57.

Francis Dyonisius Donleavy, M.D. College of Physicians and Surgeons, San Francisco, 1911; [illegible] died at his home in Santa Rosa, Cal., December 3, of septicemia, aged 26.

William C. Cobb, M.D. Pennsylvania Medical College, Philadelphia, 1877; [illegible] died at his home in Pittsburgh, December 4, from [illegible] aged 70.

Marriages

George Milton Dawson, M.D., Roanoke, Va., to Miss Nell Kirk, of Buckingham, Va., at the latter's home, near Cash, Buckingham County, Va., December 3.

Amos Hedley Chilcoate, M.D., Upper Sandusky, Ohio, to Miss Nellie Norma Dalbey, M.D., in Chicago, Ill., December 26.

Wilson Pendleton, M.D., Lexington, N. C., to Miss Mattie Virginia Smith, at Charlottesville, Va., December 26.

Herbert Jones, M.D., Mt. Sidney, Va., to Miss Frances Armour, of Nokesville, Va., December 25.

Albert S. Stetson, M.D., to Mrs. Etta V. Dixon, M.D., both of St. Louis, at Chicago, December 4.

Stanton A. Hall, M.D., Chicago, Mo., to Miss Louise Greville, of Edina, Mo., December 25.

Dr. Hugh Smith, M.D., Norfolk, Va., to Miss Diana Wyatt, of Richmond, Va., recently.

The Propaganda for Reform

In this department appear extracts from the Council on Pharmacy and Chemistry, and of the Association laboratory. Inquiries relative to the interpretation and application of the Association's Rules and Regulations should be addressed to the Council on Pharmacy and Chemistry, American Medical Association, 535 Dearborn Street, Chicago.

SODIUM ACID PHOSPHATE ADMITTED TO NEW AND NONOFFICIAL REMEDIES

Report of the Council on Pharmacy and Chemistry

The report which appears below was adopted by the Council and its publication authorized. Having adopted the standards proposed by the Association's laboratory, sodium acid phosphate was admitted to New and Nonofficial Remedies and the description of it appears in the New and Nonofficial Remedies Department of this issue.

W. A. PUCKNER, Secretary.

A referee of the Council presented the following report by the American Medical Association's Chemical Laboratory of an examination of sodium acid phosphate as found on the market along with a description of the product giving tests and standards proposed for its control.

Laboratory Report

The researches of Hanslik and Collins (Arch. Int. Med. 1913, xii, 578; THE JOURNAL A. M. A., Jan. 3, 1914, p. 43) have definitely established that the bactericidal action of hexamethylenamin is dependent on its decomposition into formaldehyd, that its value as a urinary disinfectant is dependent on and proportional to the acidity of the urine and that the administration of sodium acid phosphate with hexamethylenamin renders the urine acid. Hence it appears probable that the use of this salt in medicine will increase

V. 6
1914

As previous experience has emphasized the unreliability of little-used medicaments, the laboratory deemed it important that the market supply of this substance be studied in order that those who use it could take steps to obtain a reliable product for their prescriptions.

While the widely used official sodium phosphate may be obtained of exceptional purity, an examination of the market supply of sodium acid phosphate shows that it is decidedly variable and much less pure although not seriously impure. After consultation with manufacturers, to whom the laboratory at this time expresses its appreciation for the information given, and having in view the conditions surrounding the manufacture of little used drugs, the following standards for sodium acid phosphate are believed to be fair both to those who make it and to those who employ it in their practice:

Sodium acid phosphate should contain not less than 82 per cent. of anhydrous sodium acid phosphate, should not contain more than 15 per cent. of water of hydration, nor more than 1 per cent. of hydrated sodium sulphate and should be reasonably free from arsenic and heavy metals.

The examination included the products sold by Mallinckrodt Chemical Works, Merck and Co., Powers-Weightman-Rosengarten Company and E. R. Squibb and Sons.

The product of the Mallinckrodt Chemical Works and that of the Powers-Weightman-Rosengarten Company conformed in all particulars to the proposed tests. The salt sold under the Merck label lost about 21.5 per cent. of its weight on drying and contained sodium acid phosphate equivalent to but about 76 per cent. of the anhydrous salt. In other particulars it conformed to the tests proposed. The Squibb specimen evidently contained an appreciable proportion of secondary sodium phosphate. In other particulars it conformed to the standards proposed.

Based on these standards, a description of sodium acid phosphate is herewith submitted which would be suitable for insertion with New and Nonofficial Remedies, should the Council decide to give recognition to this salt.

RECOMMENDATION OF THE REFEREE

Your referee commends the timely report of the Association's chemists. He recommends that publication of this report be authorized, that the submitted description of sodium acid phosphate be admitted to New and Nonofficial Remedies, and that sodium acid phosphate, M. C. W., and sodium acid phosphate, P. W. R., be listed as non-proprietary preparations which comply with the standards adopted.

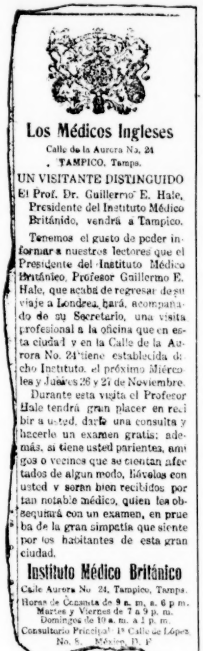
W. H. HALE, QUACK AND JAIL BIRD

"Can you give me any information about one Dr. William E. Hale, who is at the head of many so-called 'British Medical Institutes' in the United States and Mexico? I understand that he was in the Colorado penitentiary for two years and was arrested in New Orleans and jumped his bail, coming to Mexico."

A. W. PARSONS, M.D.,
Tampico, Mexico.

From the advertisements which Dr. Parsons sends, one of which we reproduce, there is little doubt that "Guillermo E. Hale" is the notorious quack, William H. Hale. Hale claims to be a graduate of the American Eclectic College. This was a fraudulent concern and has been out of existence for years. From 1883 until 1891 Hale and one G. W. Van Vleck were running a diploma-mill in Cincinnati—the "Medical University of Ohio." Diplomas were sold for from $10 to $500 apiece. In 1891 Van Vleck, who was "president," "dean" and "faculty" of this notorious fraud, was arrested and put on trial for felony. Hale fled the state and went to Denver, where he posed as a Chinese physician, "Dr. Gun Wa." While there he was indicted in the United States District Court for fraud. After the indictment, Hale fled to England and operated a fraudulent catarrh and deafness cure. He was indicted in Liverpool, England, tried and sentenced to eighteen months in the penitentiary—and served it.

He returned to the United States after the expiration of his sentence, was arrested in New York under the Denver indictment, and was sentenced to serve eighteen months in the penitentiary—and served it.



Los Médicos Ingleses

Calle de la Aurora Na. 24
. TAMPICO, Tamps.

UN VISITANTE DISTINGUIDO

El Prof. Dr. Guillermo E. Hale, Presidente del Instituto Médico Británido, vendrá a Tampico.

Tenemos el gusto de poder informar a nuestros lectores que el Presidente del Instituto Médico Británico, Profesor Guillermo E. Hale, que acaba de regresar desu viaje a Londres, hará, acompañado de su Secretario, una visita profesional a la oficina que en esta ciudad y en la Calle de la Aurora No. 24 tiene establecida dicho Instituto, el próximo Miércoles y Jueves 28 y 29 de Noviembre.

Durante esta visita el Profesor Hale tendrá gran placer en recibir a usted, darle una consulta y hacerle un examen gratis; además, si tiene usted parientes, amigos o vecinos que se crean afectados de algun modo, llévelos con usted y serán bien recibidos por tan notable médico, quien los obsequiará con un examen, en prueba de la gran simpatía que siente por los habitantes de esta gran ciudad.

Instituto Médico Británico

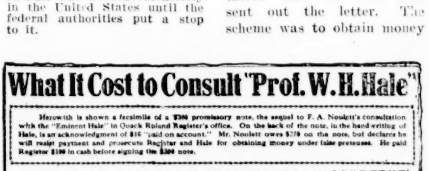
Calle Aurora No. 24, Tampico, Tamps.
Horas de Consulta de 9 a. m. a 6 p. m.
Martes y Viernes de 7 a 9 p. m.
Domingos de 10 a. m. a 1 p. m.
Consultorio Principal 1ª Calle de López No. 5, México, D. F.

Fig. 1.—Photographic reproduction (reduced) of an advertisement in a Tampico, Mexico, paper of the "British Medical Institute," announcing the alleged visit of the distinguished "Professor" Hale. This same swindle was worked extensively in the United States until the federal authorities put a stop to it.

After his release he seems to have gone to New York, for in 1895 he was indicted in connection with another man for grand larceny. It seems that Hale and his partner in fraud convinced a victim that he was suffering from serious kidney disease which would soon cause madness or death unless he took Hale's "radium cure," for which $1,500 was asked. Hale pleaded guilty to this indictment and served eight months in the penitentiary at Blackwell's Island, N. Y.

In 1900 Hale was in Jackson, Mich., where he was running what he called the "British Medical Institute." In the fall of 1902 he was arrested in Jackson for violating the medical practice act. Through a technicality this case was non-suited, but a warrant was sworn out within thirty minutes of Hale's release; in the meantime, however, Hale had fled. This closed the "British Medical Institute."

From that time Hale seems to have been an itinerant. His method was to make the rounds of various cities, his coming being advertised by local quacks, who sent letters to past and prospective victims. These letters stated that "Professor" Hale or Doctor Hale, "one of the greatest living specialists in nervous, chronic and special diseases" is on a visit from London and will be pleased to see the patient in consultation with the man who sent out the letter. The scheme was to obtain money



What It Cost to Consult "Prof. W. H. Hale"

Herewith is shown a facsimile of a $300 promissory note, the sequel to F. A. Noullett's consultation with the "Eminent Hale" in Dutch Roland Register's office. On the back of the note, in the hand-writing of Hale, is an acknowledgment of $15 "paid on account." Mr. Noullett owes $370 on the note, but declares he will resist payment and prosecute Register and Hale for obtaining money under false pretenses. He paid Register $100 in cash before signing the $300 note.

New Orleans La. [illegible] 4, 1902

3 promise to pay to

Roland Register or order.

the sum of Three Hundred Dollars.

[illegible] per cent. per annum interest thereon, from [illegible] for value received, and on the event that this note is not paid at maturity and is subsequently collected by or through an attorney, I hereby agree to pay ten per cent. attorney fees and all costs.

ATTEST [illegible]

F. A. Noullett

Fig. 2.—Photographic reproduction from the New Orleans *Morning World* indicating what it cost one individual to consult "Professor Hale." It will be noticed that the promissory note is made out to Dr. Roland Register who at that time was acting as stalking horse for Hale.

from these victims by this misrepresentation.[1] It seemed to be successful until it was tried in New Orleans. In this city the federal authorities got after Hale and his accomplices (A. S. Dyar and Roland Register) and in 1910 they were found guilty, heavily fined and sentenced to the penitentiary. Hale and his brother quacks appealed and the appellate court granted a new trial on the ground that the lower court erred in admitting the damning evidence against Hale.

Fig. 3.—A greatly reduced reproduction of an advertisement of Roland Register. An account of this man's arrest and conviction appears in "Nostrums and Quackery."

Now it seems Hale is swindling the gullible in Mexico, and has resurrected his "British Medical Institute" and is now conducting the same fraud under the term, "Instituto Médico Británico."

Quackery is international in its scope. We trust that our southern neighbors will find it feasible to put "El Prof. Dr. Guillermo E. Hale Presidente del Instituto Médico Británico" where he can be kept at state expense. It will be much cheaper for the Mexican public.

Fig. 4.—William H. Hale—convict No. 3566; from the records of the Illinois State Penitentiary at Joliet. At this time (1894-5) Hale was "serving time" as a United States prisoner from Colorado, for "using the United States mails under a fraudulent name in a scheme to defraud." In addition to the Bertillon record we find the following remarks regarding this prisoner: "Mole to the rear and top of right ear; small scar on right side of neck."

Fig. 5.—William H. Hale as Convict K°9415. Taken March 24, 1905, at the New York County Penitentiary, Blackwell's Island, N. Y. Hale is about ten years older in this picture than in the one taken at Joliet Penitentiary.

1. The scheme is fully described in THE JOURNAL'S article on "Hale, Dyar and Register," that appeared Oct. 15, 1910, and has been reprinted in the second edition of "Nostrums and Quackery."

THE RICHIE MORPHIN CURE

In his series of articles on the "Great American Fraud" which ran a few years ago in *Collier's*, Mr. Samuel Hopkins Adams devoted one chapter to "The Scavengers." This appropriate title he applied to those scoundrels who, under the guise of selling mail-order "cures" for the morphin habit, fostered the slavery of the drug habit for their own profit by substituting for the morphin addiction an addiction to their villainous mixtures of opiates. One of the concerns described by Mr. Adams in this chapter was the Richie Company, Brooklyn, N. Y., of which he said:

"Surrounded by the best religious influences, in the Presbyterian Building at 156 Fifth Avenue, New York City, the Rev. W. N. Richie, D.D., holds forth. Here, in pious words, he invokes the aid of Heaven upon his transactions. He has another address, 105 St. James Place, Brooklyn, where he does the work of Hell. By his catch-word, 'for the sake of humanity,' he has inveigled a number of well-meaning and otherwise intelligent gentlemen into supporting his scheme with their names. As high-minded a man as the late Rev. John Hall was duped, and his picture is now used on the cover of one of the Richie circulars. Rev. Dr. Burrell, the late Rev. S. S. Baldwin, Rev. C. A. Stoddard, and the editors of the *Independent*, *Christian Work* and other religious journals appear as endorsers of the Richie 'cure.' The 'literature' gotten out by the reverend exploiter reeks of a smug pseudo-piety. He recommends his nostrum as a 'Painless cure for all drug habits. Only cure endorsed by the secretaries of Foreign Mission Boards, Interdenominational Committee, etc.' He claims that it will cause 'actual destruction of the desire for narcotics.' On his letter-head appear conspicuously the words, 'Supports better than the drug. No substitute.' Mark that 'No substitute.' This means that in the remedy no drug is substituted for the one used by the victim. It is a lie. The Rev. Dr. Richie knows it for a lie. So well does he know it that his employees dare not back it up in their correspondence. After procuring a sample of the output, I wrote, under an assumed name, saying that it produced the same effect as morphin, and asking if it contained any of that drug. Here is the reply: 'There would be no special advantage in our denying or asserting the use of morphin or opium in the remedy.' 'No special use,' indeed! Their sample, on analysis, contains 2.12 grains of crystallized morphin per dose.

"I am invited to *cure* myself by taking this stuff *four* times a day. If I lived through the first dose, the second would kill me, or any of my readers who is not a morphin fiend. The ordinary dose is one-eighth of a grain, heavy dose one-fourth of a grain. But the Richie Company supposes I can stand more, so they endeavor to foist their concoction on me in place of my supposed addiction. How does this comport with their 'No substitution' claim? This and other questions I put in writing to the Rev. Dr. Richie. He has not answered it. His silence is not surprising. It is the part of wisdom—or, at least, caution. I'm not certain just how to place this reverend gentleman. It may be that he has been fooled into believing in the 'Richie cure,' and that he is an exemplar of a type of asininity so baneful and deadly that its possessor ought, for the sake of the public, to be permanently established in an asylum for the dangerously imbecile. But I think not. I think he cannot be ignorant of his traffic in ruined lives. This alternative implies flat criminality. Nor has the divinity doctor always eluded the clutch of the law. He has been convicted and fined for practicing medicine without a license."

The foregoing appeared in *Collier's* Sept. 22, 1906. On Jan. 5, 1909, June 5, 1909 and March 15, 1910, the Richie Company shipped from the state of New York into the District of Columbia three consignments of their villainous "cure." Samples from the different consignments were analyzed by the Bureau of Chemistry of the Department of Agriculture and the federal chemists reported that the product consisted of a watery-alcoholic solution of morphin sulphate, glycerin, pepsin, salicylic acid and undetermined matter. The first shipment consisted of five bottles which contained morphin sulphate in amounts varying from 14.2 grains to the fluidounce to 9.2 grains to the fluidounce. The ten bottles in the second shipment contained this same drug in amounts varying from 12.35 grains to 7.21 grains to the fluidounce. The third shipment of ten bottles also contained morphin sulphate, varying in amounts from 15.85 to 8.22 grains to the fluidounce.

V. 6
1914

On March 14, 1911, more than two years after the first shipment was made, the United States Attorney for the Eastern District of New York, acting on the report of the Secretary of Agriculture, filed an information against William N. Richie and Grant N. Richie, who were copartners under the name "Richie Company." The product was declared misbranded because the bottles and packages did not bear a statement on the label of the quantity and proportion of morphin.

On March 18, 1911, the two Richies entered a plea of "not guilty" and three months later filed a demurrer. The court overruled the demurrer and on April 2, 1913, William N. Richie and Grant N. Richie withdrew their former plea of "not guilty" and entered a plea of "guilty."

And what punishment was meted out to these two men, who were engaged in a business compared with which housebreaking and bankwrecking are respectable? None at all! The court suspended sentence.—(*Notice of Judgment No. 2554, issued Oct. 31, 1913.*)

Hard to Believe

P. D. & Co.'s monologist was in the editorial office the other day chanting the Phylacogen Magnificat. "Praise it and magnify it forever." In the course of his eulogy he stated that a correct diagnosis is essential to the successful use of Phylacogen and that in the practice of those physicians who have reported their cases to P. D. there have been but 2 per cent. of failures. We believe that it is within the bounds of cosmic possibilities that there may exist a remedy so remarkably efficient that it will cure all but 2 per cent. of cases. It is true that none of our highly prized specifics have been so efficacious even in fields far more restricted than that assigned to Phylacogen; still it is possible to conceive of such a remedy. When, however, we contemplate physicians making 98 per cent. correct diagnoses we feel that we are in view of what Kipling calls "The True Romance." We have at times believed in Dr. Cook, Reform Politics and the Pittsburgh Pirates, but when we tried to conceive of diagnosers with a batting average of 98 per cent., our editorial believer stripped its gears.—*The Mirror*, the official organ of the Fayette County (Pennsylvania) Medical Society.

Correspondence

The Better Control of Ophthalmia Neonatorum

To the Editor:—A recent communication on this subject in THE JOURNAL (Dec. 13, 1913, p. 2177) criticizes the proposed gratuitous distribution of a prophylactic for the prevention of ophthalmia neonatorum as recommended by the Committee on the Prevention of Blindness of the Council on Health and Public Instruction. The writer of the communication, Dr. Stotter of Cleveland, thinks that undue restrictions are placed on the midwife as compared with the physician. A careful reading of this bill as it appears in THE JOURNAL for June 21, 1913, p. 2004, will show that the responsibility for reporting the existence of a birth that infection of the eyes of a new-born infant is placed impartially on the responsible person in charge, whether physician, midwife, nurse, relative or whomsoever may have been in charge of the mother and child. As Dr. Stotter has evidently misunderstood the purport of the bill, it is not unlikely that others who have not given the matter careful consideration may fail to understand the reasons for each of its suggested provisions, and as these were reached only after careful consideration and extended conference with ophthalmologists, obstetricians, sanitarians and others, a brief explanation concerning them may be helpful in securing the judicious criticism which it is desired to elicit. It will be remembered that the bill is purely tentative and is published as a basis only for future legislation. While criticism is invited, therefore, it should be on the provisions actually found in the bill and not on those which it is supposed to contain.

After the essential features of the bill were determined on it was finally submitted to counsel employed by the American Medical Association in order that the phraseology might be conformable to law.

The title was found to be a matter of first importance and must embody the substance of the bill, as otherwise the validity of the law itself might be attacked.

In order to avoid ambiguity a definition of ophthalmia neonatorum was found to be necessary. Cases which had been brought to trial in Massachusetts were contested for the reason that the infecting micro-organism in these cases was not the gonococcus, and it was claimed that the resultant inflammation did not constitute ophthalmia neonatorum. If it were always insisted on that a microscopic examination be made to determine the nature of the disease, no conviction could be obtained, for if only the gonococcic cases were reported the stigma which this would carry would make it impossible to secure any reports whatever. To require this examination as a preliminary to each report would be most undesirable, moreover, and to limit ophthalmia neonatorum to those cases of gonococcic origin would be unscientific and unwarranted by the facts, for it is not only the gonococcic cases that are the serious ones. While the large majority of other infections do not result in loss of sight, the pneumococcus, the Klebs-Löffler bacillus and other organisms which are occasionally present are often equally dangerous. It is wise to emphasize the fact that many cases are innocent. When all cases are brought promptly to the attention of the department of public health it makes possible the securing of immediate treatment for those which urgently require it, whatever may be their origin.

The responsibility does not rest entirely on the attendant at the birth of a child. The health boards have many duties, and that of protecting the eyes of the new-born is one. It must be exacted, therefore, that the officer in charge of the department of health shall take such action as will secure the report in order that he may be enabled when necessary to take the proper steps to obtain for the child when infected prompt and adequate treatment. This is equally true of the state department of public health. Rules and regulations must be promulgated for the needs of the local health officers, and it must be made easy to use a prophylactic on the part of the physician by having it placed in his hands together with advice as to the manner in which it should be used and the necessity for its employment.

It is necessary periodically to print and publish such advice and information "lest we forget." After a peculiarly disastrous case an obstetrician will usually for a long time be careful in his procedures and in his use of a prophylactic. This is by no means always so. Cases have been brought to the knowledge of the Commission for the Blind in Massachusetts in which within a comparatively short time a second child has become infected in the same family and the second child has become blind. But even if the physician in charge never has another infected case he will have added his quota to the blind man's world and the lesson will have been lost.

We all need constant reminders. This is the special value of having placed on the birth-report the inquiries, "Have you used a prophylactic? If not, why?" An answer to these questions may not legally be insisted on, and an enforced answer cannot be secured. The obstetrician may decline to answer if he chooses, but whenever he makes the report of a birth the danger of birth infections to the eyes of the infant will be impressed on his mind, and the wisdom of using a prophylactic at least in all suitable cases will be emphasized; but if he fails to answer these questions or if his answer is in the negative without adequate reason and the child shall have become infected and in consequence blind, it is presumptive evidence that an important safeguard has been omitted and would seriously prejudice the interests of the physician in the event of a suit for malpractice being instituted. For his own protection, therefore, it is wise not only that he should use a prophylactic but also that he should report having done so. The obstetrician is justified in a

case in which he is morally certain that there can be no possibility of infection in omitting the use of a silver salt in the child's eyes, but in the light of the fact that the irritation which follows is so simple and the protection in a large number of cases so great there is no doubt whatever that a majority of obstetricians prefer its routine employment. It is especially desirable when it is given gratuitously that it should be of an absolutely standard strength—that it should be put up in light-proof ampules which are air-tight, and from which the solution cannot evaporate—which is easily carried, inexpensive, and which can be used without danger of injuring the eye of the infant. Such ampules are now put up by the health department of the state of New York, and last year more than 17,000 of the outfits together with literature in English, German, Italian and Polish were distributed advising midwives and others of the dangers of birth infections to the sight, the necessity of using prophylaxis, and of reporting cases to the board of health.

The reason for the gratuitous distribution of the prophylactic is not to save cost to the obstetrician, as the expense in any event is trifling, but in the first place to prevent accidents, as cases have been known in which errors on the part of the physician in writing the prescription, or the pharmacist in putting it up, have resulted in securing a preparation of dangerous strength—or because through the effect of light the solution has lost all protective value—or because, as often happens, in time of necessity the obstetrician finds that the cork has been lost from the bottle and that it is dry, and therefore is not used—or because the bottle is not in the satchel—or because in an ordinary bottle it becomes easily infected and is no longer clean, because the dropper is not clean—because, for a dozen other reasons, the simplest and safest solution to be used is the standard preparation which is issued at little cost from the laboratory of the health department. F. PARK LEWIS, M.D., Buffalo, N. Y.

[A proof of the foregoing was submitted to Dr. Stotter, who replies:]

To the Editor:—While thoroughly in sympathy with all that is being done by my esteemed colleague, Dr. F. Park Lewis of Buffalo, for the better control of ophthalmia neonatorum, I beg to insist that I have not, as is suggested, misunderstood the purpose of the tentative bill heretofore published, in claiming that undue restrictions are placed on the midwife as compared with the physician. A careful reading of this bill (Section VI) shows that while a money fine is imposed on all persons responsible for failing to report the existence of infection, the ultimate punishment provided for the midwife is revocation of her license. No such or similar punishment is provided for the physician. Should not the physician, much better qualified than the midwife, pay the forfeit for any such neglect—"lest we forget?"

In Volume XX of *Transactions of the American Association of Obstetricians and Gynecologists*, Dr. Lewis refers to two essential factors in the prevention of blindness: first, more enlightenment, a broader, more general, popular knowledge of the causes and the measures to be employed, and second, perfectly organized and coordinated effort in securing its control. He quotes the distinguished Cuban, Dr. Santos Fernandez, as saying, "The important thing is to bring before the public mind, by means of constant propaganda, a knowledge of the danger to a recently born child at all affected as to the eyes . . . and to call the attention of the family to the facilities which the authorities will furnish them to guard against blindness." (As a matter of fact, *do* our local associations favor *full* publicity in this matter?)

To this I would add such other means as public lectures, and the distribution of printed instructions to those who consult our free dispensaries and clinics, without making any secret of the unfortunate truth with its dire consequences. I recall a saying by Fuchs of Vienna to a delegation that called to intercede for a medical student who had failed in his question-in-chief—the chemical and physiologic action of silver salts in ophthalmia of the newly born: "I might overlook a wrong diagnosis of glaucoma," said Dr. Fuchs, "and any mistake you propose for the treatment of a diseased eye; but you would be unworthy of your high calling were you to lose a single eye from ophthalmia neonatorum."

JAMES STOTTER, M.D., Cleveland.

Antiquity of the Patent-Medicine Plague

To the Editor:—To show the antiquity of the patent-medicine plague I beg to call your attention to the following extract from a letter of Sylvester Graham, written at Providence, March 6, 1834, and published in the *Graham Journal of Health and Longevity*, Boston, 1837, i, 116:

"'Stop! Stop! sir!' says the mercenary vendor of specifics and patent medicines, 'look at the wonders which have been performed by the Panacea, the Catholicon, the Hygeian Medicine, etc., etc. See the long list of certificates in the newspapers!' Yes, I see them, and my heart aches for suffering and outraged humanity! Go ask the graveyards for their certificates! Were there a tongue to tell the secrets of the 'narrow house,' the ears of the specific mongers would tingle with a revelation infinitely more horrible than that which the ghost of Hamlet's father dared not to tell to ears of flesh and blood. I know that in the thousands and thousands of cases where these specifics are used, it sometimes happens that an individual is apparently benefited by them; but for this one instance hundreds and thousands are hurried to the grave. The single apparent cure is trumpeted to the world, but the grave in everlasting silence swallows up its hecatombs of human sacrifices. It may be thought that I express myself too strongly on this subject; but the sufferings and devastation which I have seen resulting from these all-pervading scourges of the world, wake up the fervent sympathies of my soul and constrain me to speak out. . . . The paltry jargon of these books and advertisements of Hygeian Medicine about the 'impurity of the blood,' etc., etc., is a tissue of the most arrant misrepresentation, falsehood and humbugging that ever deceived mankind." GRAHAM LUSK, New York.

Testimonial-Giving Seventy-Five Years Ago

To the Editor:—That the attitude of the medical profession toward patent medicines and panaceas has changed for the better in the last three-quarters of a century is evidenced by the following, quoted in the *Medico-Chirurgical Review* (London, England) for October, 1836, preceded by these words from the editor: "We were utterly astonished to find an impudent PANACEA bolstered up with the names and certificates of some of the first authorities in the medical profession of the United States! We were thunderstruck on perusing such documents as the following:

"From Doctor N. Chapman, *Professor of the Institutes and Practice of Physics and Clinical Practice in the University of Pennsylvania, President of the Academy of Medicine, Philadelphia, etc.*

"'I have within the last two years had an opportunity of seeing several cases of inveterate ulcers, which having resisted previously the regular modes of treatment, were healed by the use of Swain's PANACEA; and I do believe, from what I have seen, that it will prove an important remedy in scrofulous, venereal and mercurial diseases.

"'N. Chapman, M.D.'

"From Doctor W. Gibson, *Professor of Surgery in the University of Pennsylvania, Surgeon and Clinical Lecturer to the Almshouse, Infirmary, etc.*

"'I have employed the PANACEA of Mr. Swain, in numerous instances within the last three years, and have always found it extremely efficacious, especially in secondary syphilis and in mercurial disease. I have no hesitation in pronouncing it a medicine of inestimable value.

"'W. Gibson, M.D.'

"From Doctor Valentine Mott, *Professor of Surgery in the University of New York, Surgeon to the New York Hospital, etc.*

"'I have repeatedly used Swain's PANACEA, both in the Hospital and in private practice, and have always found it to be a valuable medicine in chronic, syphilitic and scrofulous complaints, and in obstinate cutaneous affections.

"'Valentine Mott, M.D.'

V. 6
1914

"From Doctor William **P. Dewees**, *Adjunct Professor of Midwifery in the University of Pennsylvania, etc.*

"'I have much pleasure in saying I have witnessed the most decided and happy effects in several instances of inveterate disease from Mr. Swain's PANACEA, where other remedies had failed—one that of Mrs. Brown.

"'Wm. P. Dewees, M.D.'"

It goes without saying that these men were in the very forefront of the medical profession in America three-quarters of a century ago, and this fact evoked the following closing paragraph from the editor of the *Medico-Chirurgical Review:*

"*Eheu jam satis!* We are mortified and grieved, beyond measure, to find professional propriety (to give it no other name) at so low an ebb among our brethren in America! This admonition from Europe will surely rouse the faculty of the United States to some sense of the duty they owe to their brethren throughout the world."

CHARLES B. JOHNSON, M.D., Champaign, Ill.

[COMMENT: Times change and we change with them! In 1836 British physicians were astounded at the spectacle of American medical men giving testimonials for nostrums. In 1914 American medical men view with astonishment and dismay the tendency on the part of European physicians, British and Continental, to laud proprietary remedies of the most evidently fraudulent type. Testimonial-giving by physicians in the United States is practically a thing of the past; in Great Britain and on the Continent it is so common as to arouse no comment.—ED.]

Imported Medication and Dr. Stelwagon's Formula

To the Editor:—Apropos of the remarks on "Imported Medication" in the Therapeutics Department (THE JOURNAL, Dec. 13, 1913, p. 2159), it may prove of interest to your readers to compare the prescription headed "A Formula for Combined Stomachic and Laxative Effects," with a startlingly similar prescription given in "Essentials of Diseases of the Skin," by Henry W. Stelwagon, M.D., Ph.D., clinical professor of dermatology in the Jefferson Medical College (Philadelphia, W. B. Saunders Company, 1910, p. 118). In the paragraph describing the constitutional treatment when indicated in acne the author states that "in dyspepsia and constipation, bitter tonics, alkalies, acids, pepsin, saline and vegetable laxatives are variously prescribed. Special mention may be made of the following:

"℞ Ext. rhamni pursh. fl. .....f3 ii 3iv
Tinct. nucis vom. .....f3 iii
Elix. calisayae, q. s. ad .....f3 iii
M. Sig.: 3 i t. i. d."

Compare this with the formula which you state was "copied verbatim from the *Paris médical*":

℞	Fluidextracti rhamni purshianae,	3 v	(20 grammes)
	Tincturae nucis vomicae,	3 ss	(2 grammes)
	Aquae laurocerasi,		
	Syrupi,	āā 3 ss	(15 grammes)
	Aquae destillatae,	3 iii	(100 grammes)

M. Sig.: Three or four teaspoonfuls daily.

In other words, one of our leading dermatologists was recommending practically the same formula not less than thirteen years ago. So much for the "newness" of the prescription, as far as its really active ingredients are concerned, namely, the cascara and nux vomica.

Dr. Stelwagon's mixture is not exactly pleasant to take, and the suggestion you make about giving cascara and nux vomica separately is a good one. Still, many patients, in my experience, do not find the mixture much, if at all, more unpleasant to take than the separately administered drugs, preferring one bitter dose to two or three less bitter ones.

Since 1903, first in general medical work and later in eye, ear, nose and throat practice, I have used this formula for the indications outlined by Dr. Stelwagon, with extremely gratifying results, its bitter taste to the contrary notwithstanding. In many patients, particularly women, referred for examination of eyes and nose to find possible cause of headache, I have found those organs normal. Many such patients were complaining of constipation, poor but not markedly upset digestion, and more or less anorexia, but other more definite symptoms were not elicited by their physician or myself. Such patients almost invariably were relieved of their headaches by Dr. Stelwagon's formula, or the later and possibly worse-tasting one I used in Panama, in which the compound tincture of cinchona was substituted for the elixir of calisaya.

RICHARD M. NELSON, M.D., Atlanta, Ga.

Blood Transfusion in 1666

To the Editor:—In reading the celebrated diary of Samuel Pepys I recently came across the first account, so far as I know, of the transfusion of blood, which I think will be of interest to the readers of THE JOURNAL. The following is an extract:

"Nov. the 14th, 1666. Dr. Croone told me that at the meeting at Gresham College to-night (which, it seems, they now have every Wednesday again), there was a pretty experiment of the blood of one dog let out (till he died) into the body of another on one side, while all his own run out on the other side. The first died upon the place, and the other very well, and likely to do well. This did give occasion to many pretty wishes, as of the blood of a Quaker to be let into an Archbishop, and such like; but, as Dr. Croone says, may, if it takes, be of mighty use to man's health, for the amendment of bad blood by borrowing from a better body.

"Nov. 16th. This noon I met with Mr. Hooke, and he tells me the dog which was filled with another dog's blood, at the College the other day, is very well,and like to be so as ever, and doubts not its being found of great use to men; and so do Dr. Whistler, who dined with us at the tavern."

MICHAEL CAMPBELL, M.D., Bearden, Tenn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RESPONSIBILITY OF SURGEON IN USE OF ROENTGEN RAY

To the Editor:—There are two legal questions affecting the rights and the interests of the surgeon, concerning which I should like to ask for information.

A. Is there any opinion holding a surgeon responsible for not using the Roentgen ray in fractures and other surgical conditions in which the Roentgen ray might be an aid to diagnosis? Would this be affected by the inability of the patient to pay the expenses that would have to be incurred?

B. First, is there any opinion holding the surgeon responsible when he tells the patient in advance that the result, under the conditions of the treatment, will not be satisfactory and yet treats the patient with the result foretold? Secondly, if a surgeon treats a patient because of the inability of the patient to pay hospital expenses or surgeon's fees under unfavorable conditions as to attendance and environment, etc., is he responsible for the result, if not satisfactory? The second question partly covers this.

R. D. O.

ANSWER.—The fundamental consideration underlying these questions is, What is the measure of a physician's duty and liability in diagnosing and treating a supposed fracture or a supposed surgical condition of any nature?

In the treatment of any particular case a physician must use such reasonable skill and diligence in applying or administering any medicine or means used as would be exercised by the average physician of the same community under similar circumstances (*Spain v. Burch* (*Mo.*), 154 S.W. 172; *McGraw v. Kerr* (Colo.), 128 Pac. 870; *McBride v. Huckins* (N.H.), 81 Atl. 528; *Sawyer v. Berthold* (Minn.), 134 N.W. 120; *Robinson v. Crothwell* (Ala.), 57 So. 23; *Mosslander v. Armstrong* (Nebr.), 134 N.W. 967; *Hinkle v. Smith* (Ga.), 77 S.C. 650; *Osborn v. Carey* (Idaho), 132 N.W. 967; *Booth v. Andrews* (Neb.), 137 N.W. 884).

A.—Is a physician bound to use the Roentgen ray in diagnosis? Would the liability of the physician be affected in any way by the fact that the failure to use the Roentgen ray was owing to an inability on the part of the patient to meet the expense thereof?

1. The failure to use the Roentgen ray as a means of diagnosis may, under all the facts, be a mere mistake of error or

judgment for which a physician is not generally liable (*McGraw v. Kerr* (Colo.), 128 Pac. 870; *Taylor v. Kidd* (Wash.), 129 Pac. 406).

2. A patient is always entitled to a thorough examination by his physician such as an ordinary and skilful physician would give under the circumstances (*Rogers v. Kee* (Mich.), 137 N.W. 260; *Sawyers v. Berthold* (Minn.), 134 N.W. 120).

3. Yet a failure to use the Roentgen ray would not necessarily be an error so gross as to be inconsistent with that degree of skill which it is the duty of a physician to possess and exercise, irrespective of any fee which may enter into the case (*McGraw v. Kerr* (Colo.), 128 Pac. 870; *Rogers v. Kee* (Mich.), 137 N.W. 260; *Sawyer v. Berthold* (Minn.), 134 N.W. 120; *Taylor v. Kidd* (Wash.), 129 Pac. 406; *McBride v. Huckins* (N.H.), 81 Atl. 528).

4. The skilfulness of a physician in diagnosis and treatment should be tested by the recognized rules of his own school and must be determined by resort to the testimony and opinion of experts, not only as to whether the defendant exercised ordinary care and skill in examining the case but in applying the remedies as well, and such an opinion is to be based on all the facts of the case (*McGraw v. Kerr* (Colo.), 128 Pac. 870; *Taylor v. Kidd* (Wash.), 129 Pac. 406; *Rogers v. Kee* (Mich.), 137 N.W. 260.

5. It would seem essential for evidence to be adduced that under the given conditions and all the facts it is usual and customary at the particular time and place and among physicians of the defendant's school, or immediately necessary, to use the Roentgen ray in diagnosis, or thereby to prove that failure so to do constitutes want of care and skill, taking into consideration the fact that the patient could not afford to use the Roentgen ray and that he was fully advised under the circumstances (*McGraw v. Kerr* (Colo.), 128 Pac. 870; *Rogers v. Kee* (Mich.), 137 N.W. 260).

6. Under the rule above stated the burden will rest with the patient to prove that it is usual and customary for the average physician in the correspondent's city in the exercise of ordinary skill and care to insist on the use of the Roentgen ray in diagnosing a case despite the fact that the patient is unable to pay therefor and taking into due consideration all the other facts that may enter into any given case; otherwise no liability attaches to the physician.

B.—Is a surgeon liable for unsatisfactory results due to treatment under unfavorable circumstances as to attendance and environment owing to the patient's inability to pay hospital expenses, etc., supposing the surgeon has warned the patient in advance as to the probable results?

1. Physicians and surgeons do not impliedly warrant the recovery of a patient and are not liable on account of any failure in that respect, generally speaking, unless through some default of their own (*Booth v. Andrews* (Neb.), 137 N.W. 884).

2. In an action for damages against a licensed physician the presumption is that he has performed his duty to his patient and also that the physician has correctly prescribed for and treated the patient. If the contrary be alleged the burden is on the patient to establish any liability on the part of the physician (*Booth v. Andrews* (Neb.), 137 N.W. 884; *Cozine v. Moore* (Iowa), 141 N.W. 424; *Hinkle v. Smith* (Ga.), 77 S.E. 650; *James v. Robertson* (Utah), 117 Pac. 1068; *Ballard v. Railway* (Ky.), 139 S.W. 771; *Bigger v. Railway* (Mo.), 140 S.W. 602; *Hales v. Raines* (Mo.), 141 S.W. 917; *Frazin v. Ins. Co.* (Mo.), 141 S.W. 936; *Fields v. Traction Co.* (Minn.), 133 N.W. 577).

3. Hence the burden would again rest on the patient to prove that under all the circumstances the physician had failed to exercise that ordinary degree of skill and care that is exercised by physicians in his locality; otherwise no liability attaches to the physician.

Under both A and B the issue raised would most properly be left to the jury to decide as to whether or not the physician had exercised the proper degree of skill and care. If this be decided in the affirmative, then as a matter of law there is no liability. If in the negative liability would attach, and it would be incumbent on the jury to affix damages.

LITERATURE ON THE BINET TESTS FOR ESTIMATING MENTALITY

To the Editor:—Please publish a bibliography concerning the Binet tests for estimating mentality.

R. F. STOOPS, M.D., Crosbyton, Tex.

ANSWER.—Following are references to the recent literature:

Sullivan, W. C.: Feeble-Mindedness and Measurement of Intelligence by Method of Binet and Simon, *Lancet*, London, March 23, 1912.

Potts, W. A.: Tests of Intelligence, *Brit. Med. Jour.*, April 20, 1912.

The Binet-Simon Tests, Queries and Minor Notes, THE JOURNAL, Jan. 13, 1912, p. 132.

Binet, A., and Simon, T.: A Method of Measuring the Development of the Intelligence of Young Children, Courier Company, Lincoln, Ill., price $1.

Goddard, H. H., The Binet-Simon Measuring-Scale for Intelligence, *Training School*, January, 1910; Two Thousand Normal Children Measured by the Binet Measuring-Scale of Intelligence, *Pedagogical Seminary*, June, 1911.

Hill, H. F., and Goddard, H. H.: Delinquent Girls Tested by Binet Scale, *Training School*, June, 1911.

Town, C. H.: Binet-Simon Intelligence Tests in Their Application to Defectives, *Illinois Med. Jour.*, August, 1912.

Cruchet, R.: The Binet Test for Mental Retardation, *Jour. de méd. Bordeaux*, Jan. 7, 1912.

LITERATURE ON ACIDOSIS

To the Editor:—Kindly refer me to any new matter you may be in possession of in regard to acidosis.

C. L. P.

ANSWER.—The following list includes articles which have appeared within the past two years:

Gordon, W. S.: Acidosis, *New York Med. Jour.*, March 15, 1913.

Laubé and Bith: Diagnosis of Acidosis, *Presse méd.*, Dec. 21, 1912.

Fleischer, E. C.: Importance of Non-Diabetic Acidosis, *California State Jour. Med.*, January, 1913.

Levison, C. G.: Postoperative Acidosis, *California State Jour. Med.*, January, 1913.

Sellards, A. W.: Determination of the Equilibrium in Human Body between Acids and Bases, with Special Reference to Acidosis and Nephropathies, *Bull. Johns Hopkins Hosp.*, October, 1912; 1047, THE JOURNAL, Nov. 2, 1912, p. 1651.

Hart, T. S., Acidosis Index, *Quart. Jour. Med.*, July, 1912.

Routh, L. M.: Parotitis Associated with Glycosuria and Acidosis, *Brit. Med. Jour.*, July 13, 1912; abstr., THE JOURNAL, Aug. 4, 1912, p. 484.

Nielsen, A.: Histologic Determination of Acidosis in Inanition, *Hospitalstid.*, Oct. 30, 1912.

Montlawn, H.: Clinical Importance and Significance of Acidosis in Diabetes, *Med. Press and Circ.*, Oct. 16, 1912.

Boyer: Types of Respiration in Health and in Acidosis, *Ztschr. f. klin. Med.*, 1913, lxxvii, Nos. 3 and 4.

Lauritzen, M.: Diabetic Acidosis, *Therap. d. Gegnw.*, February, 1913; abstr., THE JOURNAL, March 15, 1913, p. 872.

Le Lorier, V.: Ferric Chlorid Test of Acidosis in Vomiting of Pregnancy, *Rev. prat. d'obst. et de gynéc.*, July, 1912.

Parkinson, H. H.: Acidosis and Acetonemia, with Report of Four Cases, *Louisville Med. Mo.*, May 3, 1913.

Eustis, A.: Acidosis: Two Types Demonstrable—Endogenous and Exogenous, *New Orleans Med. and Surg. Jour.*, September, 1913.

Palmer, W. W., and Henderson, L. J.: Clinical Studies on Acid Base Equilibrium and Nature of Acidosis, *Arch. Int. Med.*, August, 1913, p. 153.

Acetic Acid and Acidosis, editorial, THE JOURNAL, April 12, 1913, p. 1158.

Richards, J. H.: The Wassermann Reaction in Diabetes Mellitus, with Special Reference to Its Relation to Acidosis, THE JOURNAL, April 12, 1913, p. 1139.

EPINEPHRIN IN PRESCRIPTION

To the Editor:—Some months ago, having learned that the Council on Pharmacy and Chemistry of the A. M. A. had adopted epinephrin as a generic term for all adrenal preparations, I gave up prescribing adrenalin chlorid, and have since ordered epinephrin. I have had difficulty in getting a prescription filled at times, the pharmacist stating that he did not have that particular preparation in stock.

In the Practical Medicine Series, viii, 111, Butler states that epinephrin is a trade-marked name. Is this true, and if so, how should my prescriptions be written to permit the pharmacist to dispense any one of the adrenal preparations?

LINN EMERSON, M.D., Orange, N. J.

ANSWER.—Epinephrin is a non-proprietary unprotected name, originally used by Professor Abel, and adopted by the Council on Pharmacy and Chemistry to designate the active agent of the suprarenal glands. When used in a prescription, especially if followed by the designation N. N. R., the druggist ought to understand that any one of the preparations mentioned in N. N. R. can be used to fill the prescription.

GARDNER'S AMMONIUM HYPOPHOSPHITE AND HYPO-QUINIDOL

To the Editor:—I enclose herewith R. W. Gardner's booklet on Ammonium Hypophosphite and Hypo-Quinidol and would be pleased if you would give a report of them in THE JOURNAL.

S. V. ROMIG, M.D., Chicago.

ANSWER.—Gardner's Syrup of Ammonium Hypophosphite is a syrup containing 3.33 gm. ammonium hypophosphite in each 100 c.c. (16 grains in each fluidounce). It has the properties of ammonium hypophosphite. Both ammonium hypophosphite and Gardner's Syrup of Ammonium Hypophosphite are described in New and Nonofficial Remedies, 1913. An exam-

ination of the advertising matter both of the circular sent in and of that which is in our files fails to show that R. W. Gardner makes any definite statement in regard to the nature or the composition of his Hypo-Quinidol. Certain statements made in the literature sound much as if the article might be some sort of a quinin hypophosphite preparation. But if this is true, its action would be the same as other salts of quinin and the extravagant claims made could not be substantiated. It is said to be a "non-toxic quinin." It is safe to say that a quinin which will not produce the toxic symptoms—cinchonism—either is not absorbed in sufficient quantity or has been so changed that it no longer has the therapeutic properties of quinin. Altogether Hypo-Quinidol must be put down as a preparation the composition of which is kept secret and regarding which extravagant and highly improbable statements are made.

DOES THE JOURNAL NEGLECT THE EAST?

To the Editor:—The enclosed speaks for itself. If it is of value to the profession, use it, although I prefer my name to be kept out of it. Most of the frauds you have uncovered "worked" the West. I do not remember an Eastern or New England concern that you have shown up since I became a subscriber.

X———, Massachusetts.

ANSWER.—Our correspondent enclosed in his letter some material sent out by the Neal Institute. This concern was discussed in THE JOURNAL, April 5, 1913, under the title, "The Gatlin Institute."

That we have not neglected the east in our propaganda work will be evident from the following partial list of products or concerns that have been exposed in THE JOURNAL since November, 1912—the time at which our correspondent became a subscriber.

Fagret's Hair Tonic, Baltimore; Nov. 16, 1912.
Duffy's Malt Whiskey, Rochester, N. Y.; Nov. 23, 1912.
Peeke's Epilepsy Cure, New York City; Nov. 30, 1912.
Baume's Analgesic Balm, New York City, Dec. 14, 1912.
Micajah's Uterine Wafers, Warren, Pa.; Jan. 4, 1913.
Rheumaticide, New York City; Jan. 4, 1913.
Coutant's Deafness Cure, New York City; Jan. 25, 1913.
Magnen's Powder, Philadelphia; Feb. 15, 1913.
Iosaline, New York City; March 15, 1913.
Flours and Foods for Diabetics, Watertown, N. Y., New York City and Rochester, N. Y.; March 22, 1913.
Collyrium—Wyeth, Philadelphia; May 17, 1913.
Respirazone, Tilden, New Lebanon, N. Y.; June 14, 1913.
Sinkina, New York City; Sept. 27, 1913.
Absorbine, Jr., Springfield, Mass.; Oct. 25, 1913.
Edward E. Gardner, deafness-cure quack, New York; Nov. 1, 1913.
Morley Ear Phone, Philadelphia; Nov. 22, 1913.
Pulmonol-consumption cure fraud, New York City, Nov. 29, 1913.
Dowd's Phosphatometer, Buffalo; Dec. 20, 1913.

WORKS OF NAPOLEON'S SURGEON-GENERAL

To the Editor:—Can you inform me if there is an English translation of the works of the surgeon-general of Napoleon I, and if so, where it can be obtained?

F. H. STIBBENS, M.D., San Francisco.

ANSWER.—The following are works of Dominique Jean Larrey, surgeon-in-chief of the French army during the Napoleonic campaigns:

Memoirs of Military Surgery of French Army on the Rhine, in Corsica, etc., Baltimore, 1814, J. Cushing.
Observations on Wounds, Philadelphia, Mielke & Biddle, 1832.
Surgical Memoirs of Campaigns of Russia, Germany and France, Philadelphia, Carey & Lea, 1832.

These books are now out of print, but copies can probably be picked up second-hand.

TREATMENT OF PERSPIRING FEET

To the Editor:—1. What is the best treatment of perspiring feet?

2. Has any author devoted special attention to this?

P. L. S.

ANSWER.—1. The cautious use of the Roentgen ray is recommended as the best method of checking excessive perspiration. Among the local applications which may be used with benefit are tannic acid, alum or zinc sulphate in from 1 to 8 per cent. solutions (from 1 dram to 1 ounce to a pint of water). Another useful application is a 1 per cent. dilution of liquor formaldehydi in water. The parts should be washed and then bathed in one of these solutions for several minutes twice daily and afterward powdered with boric acid, with or without 1 or 2 per cent. salicylic acid.

2. We know of no special work on this subject. It is treated in the works on diseases of the skin.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

A NEW MEDICAL ORGANIZATION IN ENGLAND

The discussion and bitter feeling engendered by the passage and enforcement of the British national insurance act has culminated in the organization in England of a new national body known as the National Medical Union. This organization grew out of the conference of delegates representing the so-called "non-panel practitioners," that is, the physicians of England who have for various reasons declined to go on the "panel" or list of physicians available in each locality for services under the insurance act. Commenting on this new organization, the *Medical Press and Circular*, an independent journal of London, says that as far as can be gathered from the published reports, the reason for the organization appears to be opposition to the insurance acts themselves and opposition to the management of the British Medical Association. As was noted at the time, the special representative meeting of the British Medical Association held shortly after the passage of the insurance act took a radical position against the provisions of the act and called on the individual members of the association to pledge themselves not to take part in the enforcement of the act. When the test came up, however, and the individual physicians were called on to decide whether they would place their names on the list of physicians available under the law, or enter a protest by refusing to take part in enforcing its provisions, a large majority of the members of the association enrolled themselves as eligible for local services. Those physicians who adhered to their pledge have consequently been dissatisfied with the present situation. The peculiar condition which at present exists is that the new organization, which is practically called into existence through dissatisfaction with the British Medical Association, is made up largely of members of the association who have conformed to the policy of the association itself.

The new organization seems to find a great deal of difficulty in determining the qualification for membership. It was first proposed to accept only physicians not concerned in any way in service under the insurance act. A wide difference of opinion prevailed, but a compromise was finally effected by the adoption of a rather vague resolution providing that membership should be limited to those not on the "panel," leaving the determination of individual cases to local organizations. Commenting on this point, the *Press and Circular* says, "The National Union starts on an apparently contradictory constitution that indirectly admits panel men to a non-panel organization." Regarding the general situation, the *Press and Circular* is equally emphatic. It says that there is little doubt that the machinery of administration and the management of the British Medical Association leave much to be desired, and that, at any rate, there is room for another medical organization to undertake important functions either neglected or inadequately performed by the British Medical Association as now conducted. The new organization starts out with about a thousand members and fifty local associations. The number of non-panel physicians in the United Kingdom eligible to membership is estimated at about ten thousand, but after deducting consultants and specialists and those holding official positions who are consequently not affected by the new act, the total number of active non-panel practitioners to which such an organization would appeal would be about five thousand.

RECENT DEVELOPMENTS IN GERMANY

In Germany, the government has taken a hand in the effort to carry out the provisions of the industrial insurance laws in force in that country. The ministers of trade, agriculture and the interior have issued a general order, outlining methods

to be followed by insurance societies which may fail to secure a sufficient number of physicians by January 1. This order authorizes insurance societies, in case they are unable, through no fault of their own, to furnish medical services, to pay their insured persons a lump sum of money in place of furnishing professional services. This action is regarded as unfavorable to the position which the physicians interested have taken. The Federation of German Doctors Unions has issued a statement calling attention to the fact that the present struggle is not against individual members of the insurance societies, but is only against the management of these societies, and that physicians throughout Germany will continue to take care of their individual patients, as individuals, but not as members of the insurance societies. The so-called strike of physicians is, therefore, not against the patients but against the organizations. The statement contains detailed directions to individual physicians as to what action is to be taken under existing circumstances. Physicians are directed to charge exactly the same fees that they would receive if they were doing the work for the insurance societies. The *British Medical Journal*, commenting on the German situation, says that if the profession is strong enough and sufficiently united to carry out the fight in the manner indicated in the instructions of the executive committee, a complete victory for the physicians is sure to be the result. As the lack of unity among the members of the British Medical Association was the important and determining factor in the British situation, it will be interesting to know whether the German profession is any more united and will stand together better than did their professional brethren in Great Britain.

PRESENT STATUS OF OPTOMETRY LEGISLATION

A number of inquiries have been received regarding optometry laws. From the most recent and best available information, it would appear that optometry laws have been adopted by twenty-eight states as follows:

1901—Minnesota.

1903—California and North Dakota.

1905—Oregon.

1906—New Mexico.

1907—Arizona, Idaho, Indiana, Montana, Nebraska, Tennessee and Utah.

1909—Delaware, Florida, Iowa, Kansas, Maine, Michigan, New York, North Carolina, Rhode Island, Vermont, Washington and West Virginia.

1911—New Hampshire and Oklahoma.

1913—Nevada.

A diagram of optometry legislation would show that this movement had its inception in the early part of the last decade. It gathered its impetus throughout this period, and apparently reached its high-water mark about 1909. From 1910 to the close of the legislative year 1912-1913 only four states adopted such laws.

During the latter period optometry bills have been introduced in the different legislatures and rejected as follows:

1910—Rejected in Kentucky, Maryland, Massachusetts, New Jersey and Ohio. Successful in none.

1911—Rejected in eighteen states. Successful in two states.

1912—Successful in one state.

1913—Rejected in Colorado, Connecticut, Missouri, New Jersey, Ohio, Pennsylvania, South Carolina, South Dakota, Texas and Wisconsin. Successful in one state.

At present there are twenty states in which the optometrists have failed to secure affirmative action for their bills, as follows: Alabama, Arkansas, Colorado, Connecticut, Georgia, Illinois, Kentucky, Louisiana, Maryland, Mississippi, Missouri, New Jersey, Ohio, Pennsylvania, South Carolina, South Dakota, Texas, Virginia, Wisconsin and Wyoming.

Vaccine Therapy.—The fundamental principle of vaccine therapy as I conceive it is to exploit in the interest of the infected tissues the unexercised immunizing capacities of the uninfected tissues.—Sir Almroth E. Wright.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 13. Chairman, Dr. W. H. Sanders, Montgomery.

ILLINOIS: The Coliseum Annex, Wabash Ave. and 16th St., Chicago, Jan. 14-16. Acting Sec., Amos Sawyer, Springfield.

INDIANA: Room 56 State House, Indianapolis, Jan. 13-15. Sec., Dr. Wm. T. Goff, 56 State House, Indianapolis.

KANSAS: Topeka, Feb. 9-11. Sec., Dr. H. A. Dykes, Lebanon.

MISSOURI: Jefferson Hotel, St. Louis, Feb. 9-11. Sec., Dr. J. A. B. Adcock, Jefferson City.

NEBRASKA: Lincoln, Feb. 11. Sec., Dr. H. B. Cummins, Seward.

NEW MEXICO: Santa Fe, Jan. 12. Sec., Dr. W. E. Kaser, East Las Vegas.

NEW YORK: Jan. 27-30. Mr. Harlan H. Horner, Chief of Examinations Division, Albany.

OKLAHOMA: Oklahoma City, Jan. 13. Sec., Dr. John W. Duke, Guthrie, Okla.

SOUTH DAKOTA: Capitol Bldg., Pierre, Jan. 13. Sec., Dr. Park B. Jenkins, Waubay.

VERMONT: Montpelier, Jan. 13-15. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Spokane, January 6-12. Sec., Dr. F. P. Witter, Traders' Block, Spokane.

WISCONSIN: Madison, Jan. 13. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

"Quality, Not Quantity, in Medical Training"

Several times recently we have taken pleasure in noting the insight into medical matters shown by the Boston *Herald*. In its issue of Dec. 22, 1913, under the preceding heading, it said:

"Fifty-odd medical schools have gone out of existence in the last few years—either by actual cessation or by merger with other institutions, following the agitation for higher standards in medical teaching.

"The change is significant. By far too many schools were mere 'diploma factories,' with but a pretense at instruction. Preparation for the state board examinations was the curriculum. Other institutions, more sincere in purpose, were wretchedly inadequate, without proper laboratory and clinical facilities. The graduates from such schools entered practice doubly handicapped. They were usually unable to secure a hospital appointment and thus were obliged to treat with only the barest theoretical training.

"The effect on the medical profession has been marked. In many outlying districts, in particular, ignorant practitioners have brought the science into disrepute, driving their ill-treated patients either to out-and-out quacks or to cults of one kind or other.

"The evolution which has greatly lessened the number of 'medicos' should be beneficial in many ways. The profession has become greatly overcrowded—as have many other fields, to be sure. But keenness of competition is apt to be most disastrous in medicine, by tempting to departure from ethical standards and by unduly emphasizing the financial aspects of service. Wherever the physician's bread and butter becomes as important a consideration as his patient's welfare, the practice of medicine is marked for decline.

"For that reason the elimination of the cheap medical school—of the institution where payment for the whole course in advance is taken at a great discount—is gratifying. It will result in a better standardization of medical theory and practice, and in a continuance of the high plane of ethics on which the success of the profession depends."

Oklahoma July Report

Dr. John W. Duke, secretary of the Oklahoma State Board of Medical Examiners, reports the written examination held at Guthrie, July 8-9, 1913. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 70. The total number of candidates examined was 35, of whom 34 passed and 1 failed. Twenty-three candidates were licensed through reciprocity, including 2 osteopaths. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
University of Arkansas	(1912)	76
Bennett Medical College	(1913)	81
Chicago College of Medicine and Surgery	(1912) 88; (1913) 84, 90.	
Rush Medical College	(1913)	87

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Kansas Medical College	(1913)	84
Tulane University	(1913)	84, 85
St. Louis University	(1911)	77
University Medical College, Kansas City	(1913)	85
American Medical College, St. Louis	(1913)	85, 86
St. Louis College of Physicians and Surgeons	(1913)	79
Eclectic Medical Institute, Cincinnati	(1897)	82
Western Reserve University	(1912)	84
University of Oklahoma (1913) 81, 82, 84, 84, 85, 86, 87, 89.		
Memphis Hospital Medical College (1913) 80, 81, 86.		
Vanderbilt University	(1913)	79
University of Tennessee	(1913)	83
Meharry Medical College	(1913)	72
Chattanooga Medical College	(1906)	70
Fort Worth School of Medicine	(1913)	80, 82
Marquette University	(1912)	75

FAILED

Memphis Hospital Medical College	(1911)	66

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Illinois	(1907)	Nebraska
American College of Med. and Surgery, Chicago	(1903)	Arkansas
University of Louisville	(1898) Texas; (1909)	New Mexico
Kentucky School of Med.	(1887) (1894) Texas; (1908)	New Mexico
Tulane University	(1895) Arkansas; (1905)	Mississippi
Missouri Medical College	(1885)	Arkansas
Washington University, St. Louis	(1907)	Arkansas
American Medical College, St. Louis	(1910)	Arkansas
Starling Medical College	(1890)	W. Virginia
Eclectic Medical Institute, Cincinnati	(1886)	Texas
Vanderbilt University	(1887) Texas; (1911) Tennessee; (1912) Arkansas.	
Memphis Hospital Med. Coll.	(1901) Arkansas; (1910)	Mississippi
University of Nashville	(1901)	Arkansas
Meharry Medical College	(1910)	Tennessee

The following questions were asked:

ANATOMY

1. Describe the abdominal aorta. Give beginning, course and ending. 2. Give size, shape, origin and insertion of the pectoralis major muscle. 3. Give number of bones composing the pelvis. 4. Give articulations of the ethmoid bone. 5. Describe the difference between the intercostal nerves and the other spinal nerves, as to distribution. Give number. 6. What is transmitted through the foramen magnum? 7. Give number and name of the coats of the large intestine. 8. Give names of the ligaments of the liver. 9. Give the number of pairs of the spinal nerves. Name them. 10. Give the articulations of the humerus.

PHYSIOLOGY

1. Define: (a) function, (b) metabolism, (c) anastomosis, (d) endosmosis, (e) karyokinesis. 2. What do you understand calcification to be? 3. Describe the capillary circulation. What force propels the blood through the tissues? 4. What is the distribution of the anterior division of the 5th pair of spinal nerves including their connection with the sympathetic nervous system? 5. Give the chemical and physical properties of normal urine. 6. What part of the brain has supervision of the equilibrium of the body? 7. Give name of the first pair of cranial nerves, also their origin and function. 8. What are the functions of the kidney? 9. What is meant by a ductless gland? Name one and give its function. What nerves supply the muscles of expression?

CHEMISTRY

1. What is an element? What element is in all acids? What elements enter into formation of all organic bodies? 2. Complete the equation, $C_2H_4Cl + KOH =$ What? After completing the equation name the compounds on either side of the equation. 3. How would you determine chemically whether a urinary deposit were composed of urates or phosphates? 4. Define the following: Allotropism, endosmosis, alloy, amalgam. 5. Give chemical antidotes for poisoning from apomorphin. 6. Give chemical antidotes for iodin and also formaldehyd. 7. Give chemical name and formula for iodoform. 8. What is an alkaloid? What is the difference between a base, salt and an acid? 9. If the specific gravity of a patient's urine were 1.014, would you make a Fehling's test of the urine? Outline the procedure for examination of urine for an applicant for $1,000 life insurance. 10. Describe hydrochloric acid as to its occurrence. Give symbols for hydrochloric acid and antidotes (chemically) in case of poisoning.

PHYSICAL DIAGNOSIS

1. Define physical diagnosis. 2. How many methods of eliciting physical signs? Name them. 3. Name the most important of the methods. 4. Describe palpation. 5. What is auscultatory percussion? 6. Diagnose spasmodic asthma. 7. What do the methods of physical examination of the heart include? 8. What is a râle? 9. Define a murmur. 10. What is the rhythm of a murmur?

BACTERIOLOGY AND PATHOLOGY

1. Define bacteriology. 2. Describe a culture of typhoid bacillus. 3. What is a pyogenic microbe? 4. Name three microbes and classify them. 5. What is a spirillum? 6. Define pathology. 7. Give pathology of lobar pneumonia. 8. Give pathology of erysipelas. 9. Give pathology of diphtheria. 10. Give pathology of trachoma.

TOXICOLOGY AND MEDICAL JURISPRUDENCE

1. Give maximum dose of hyoscine hydrobromate. How would you treat a case of hyoscine poisoning? 2. What is the smallest fatal dose of white arsenic? Give shortest interval before death. Give treatment for arsenical poisoning. 3. What is the fatal dose of carbolic acid taken internally? How soon does death occur after the poison has been swallowed? Give treatment. 4. Give fatal dose of ergot. How would you treat a case of poisoning from the drug? 5. Give fatal dose of podophyllum. 6. What is general paresis? 7. What would be your method of examining a person suspected of feigning insanity? 8. If you were called on to help determine the plea of legitimacy, or to ascertain whether or not the woman had actually been pregnant, or if an attempt had been made to conceal a birth, how would you proceed to make the examination? 9. How would you go about having an insane person committed to the Hospital for the Insane in this state? 10. How would you differentiate between real concussion of the brain, and feigned concussion of the brain?

SURGERY

1. What is inflammation? How does inflammation extend and how may it terminate? 2. Make a differential diagnosis of coma from injury, apoplexy, uremia, opium poisoning and alcoholic intoxication. 3. With what conditions may aneurysm be confounded? 4. What are the methods of controlling hemorrhage? 5. What are the causes of secondary hemorrhage? 6. Describe resection of the knee-joint. 7. How would you perform tracheotomy? 8. Describe the operation for empyema. 9. When is operative interference advisable in the treatment of malignant tumors? 10. Give causes and treatment of rupture of the urinary bladder.

GYNECOLOGY

1. What are the physical signs of prolapsed ovary? Give treatment. 2. Describe the technic of catheterization. 3. Discuss ventrofixation of the uterus. 4. Define vicarious menstruation? 5. Diagnose carcinoma of the breast. 6. Describe the malformations of the uterus. 7. Give causes of hemorrhagia. 8. Describe the varieties of uterine fibroma. With what other conditions may they be confounded? 9. What is salpingitis? Give etiology. 10. What is a pessary? Give indications for its use.

OBSTETRICS AND HYGIENE

1. Give origin of blood and nerve supply of the uterus. 2. (a) Make a diagnosis of pregnancy at the twelfth week. (b) Can you make a positive diagnosis at this time? 3. Make a diagnosis of tubal pregnancy before rupture of the tube. 4. What conditions may simulate rupture of the tube in tubal pregnancy? 5. (a) How should the cord be dressed? (b) How would you control hemorrhage of the cord? 6. Treat a case of threatened abortion. 7. (a) What is the perineal body? (b) What are its functions? 8. (a) What are the signs of fetal death in utero? (b) Give treatment of a case. 9. What disposition would you make of the excreta of a typhoid patient? 10. What four diseases are more apt to be carried in milk?

MATERIA MEDICA AND PRACTICE

1. In what diseases may hemorrhage from the bowels occur? 2. Differentiate neuritis from neuralgia. 3. What is the difference between anesthetics and anodynes? 4. Define pertussis, dysphagia, uremia, kyphosis, hemoptysis. 5. Name the official digestive ferments and give indications for their use. 6. Give etiology, symptoms and treatment of erysipelas. 7. Give indications for the use of ergot. What is the effect of a toxic dose? 8. Discuss palpitation of the heart. 9. Compare the physiological action of belladonna and hyoscyamus. 10. For what is potassium permanganate used?

Connecticut November Report

Dr. Charles A. Tuttle, secretary of the Connecticut State Medical Examining Board, reports the written examination held at New Haven, Nov. 11, 1913. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 53, of whom 29 passed and 24 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Yale University	(1912) 79.9,	84.7
Georgetown University	(1912) 75; (1913)	75.3
Rush Medical College	(1912)	80.3
College of Physicians and Surgeons, Baltimore	(1913) 75.8,	81.2, 86.4.
University of Maryland	(1912)	76.5
Tufts College Medical School	(1912) 82.2; (1913)	77.9
Fordham University College of Medicine	(1912) 75.2,	78
Long Island College Hospital	(1911)	76.4
New York University Medical College	(1897)	69.8*
University and Bellevue Hospital Medical College	(1913) 76;	79.9; 80.5.
Jefferson Medical College	(1911) 85.2; (1913)	81.3, 84.3
Medico-Chirurgical Coll. of Philadelphia	(1905)	78.1
University of Vermont	(1913) 75.5, 75.7, 76.1, 76.3, 79.4,	79.6.
McGill University, Montreal	(1913)	83.6

* Credit of 10 per cent. allowed for years of practice.

FAILED

University of Louisville	(1912)	46.1, 59.6
Baltimore Medical College	(1909)	66.5
Baltimore University, School of Medicine	(1905)	29.5
College of Physicians and Surgeons, Baltimore	(1911) 61.7; (1913)	60.2.
Maryland Medical College	(1911) 56.1; (1912) 59.8; (1913)	58.7, 61.7, 68.2.
University of Maryland	(1912)	72.6
Tufts College Medical School	(1912) 68.2; (1913)	72.6
University of Michigan, Dept. of Med. and Surg.	(1912)	67.9
Columbia University	(1913)	59.9
Fordham University	(1912)	70.9
Long Island College Hospital	(1910)	64
University of the South	(1902)	51.6
University of Vermont	(1912) 68.9, 69.4, (1913) 65, 68.3,	70.7.

Book Notices

DISEASES OF WOMEN. A Clinical Guide to Their Diagnosis and Treatment. By George Ernest Herman, M.B., F.R.C.P., F.R.C.S., Consulting Obstetric Physician to the London Hospital. Assisted by R. Drummond Maxwell, M.D., F.R.C.S., Assistant Obstetric Physician to the London Hospital. Fourth Edition. Cloth. Price, $7.50 net. Pp. 899, with 300 illustrations. New York: Funk & Wagnalls Company, 1913.

For many years this was one of the most authoritative of British text-books on diseases of women. In its early form the work showed considerable variation from the conventional text. The author's original aim, as frankly set forth, was to provide a book which should guide the student and practitioner to the diagnosis and right treatment of the diseases of women. Without regard to anatomic classification he endeavored to present the different affections in the way in which they appeared in practice. Thus the work was classified according to symptoms, a scheme which has some definite advantage from a purely clinical point of view, if confusing to the reader accustomed to the commoner anatomic arrangement. After a few introductory chapters, chronic pelvic pain is discussed, then pelvic inflammation, and next internal hemorrhage in general and is followed by five short chapters on leukorrhea. The disorders of menstruation and of the sexual functions come next, followed by urinary and rectal complications. The volume concludes with a complete presentation of the subject of abdominal tumors. This arrangement is continued in the new edition, diagnosis and treatment again being emphasized. The greatest change in the present volume is in the parts relating to operative technic, the portion of the work revised by Dr. Maxwell. In the plastic work of cervix and vagina and in radical extirpation for malignancy, as well as in many other instances, the revision has added greatly to the book as a text. Many of the illustrations, including eight in color, are new.

DISEASES OF WOMEN. MEDICAL AND SURGICAL GYNECOLOGY. By Charles A. L. Reed, A.M., F.C.S., M.D., Professor in the University of Cincinnati. Cloth. Price, $6. Pp. 944, with 448 illustrations. New York: D. Appleton & Co., 1913.

In this latest addition to the long list of American text-books on gynecology the writer has succeeded in his attempt to make a book that is at once systematic, direct and brief without being synoptic, and is comprehensive without being discursive. The author's clear, incisive style and talent for rhetorical presentation has enabled him to cover the wide range of subjects and present his views clearly and forcefully. He has presumed a knowledge by the reader of the elementary anatomy and pathology of the subjects treated. These, as well as the usual bibliographic tables, are therefore omitted. The genito-urinary diseases of women, surgical conditions of the kidney and ureter, surgery of the rectum and certain obstetric operations are included. The somewhat unusual arrangement of the matter which is carried out to its logical conclusion, aids materially in the use of the book for ready reference. It is divided into sections on malformations, injuries, displacements, foreign bodies, infections, neoplasms and trophic changes. Within each section the affection is considered generally in its relation to the anatomic regions, a chapter being devoted to each region.

We turn with particular interest to the section on infections. The gonococcus infection is treated at length, but we are somewhat disappointed to find no reference to the use of vaccines in diagnosis and treatment, a subject which really originated in this country. It would seem also that the important and special features of vulvovaginitis in children demand mention. Under streptococcus infection of the uterus the author considers puerperal infection and advises radical treatment that is opposed to the teaching of most obstetricians in this country. On the first sign of abnormal temperature, with or without chill, a careful exploration of the uterus is advised. If the symptoms are of intra-uterine origin, thorough curettement is advised. In the technic of curettage it is directed after the use of the curet and irrigation to pack the uterine cavity with gauze saturated with 98 per cent. phenol (carbolic acid), which should be left *in situ* from three to five minutes and then replaced for a similar length of time with gauze saturated with pure alcohol.

In the treatment of suppurating mastitis the author recommends that a drainage-tube should be inserted into the abscess and kept in as long as the discharge is purulent. In these cases many believe that the rubber drainage-tube often keeps open fistulas that would be avoided by the use of wick drains. No reference is made to the Roentgen and radium treatment of neoplasms. Section 8 is devoted to surgical conditions of pregnancy and parturition. Induction of abortion, ectopic pregnancy, rupture of the uterus, laceration of the cervix and perineum, symphyseotomy and cesarean section are considered. Just why these obstetric operations should be included and the others omitted is not apparent. The last section is devoted to menstruation and its diseases and was written by Dr. Dan Millikin for the "Text-Book of Gynecology," published in 1901. As it has not been revised it does not include the important changes in our knowledge of menstruation that have resulted from the epoch-making work of Hitschmann and Adler. The illustrations are nearly all original. While many are sketches and some more or less diagrammatic they are very satisfactory in giving a clear picture of what is intended. The book as a whole is an interesting and valuable contribution to our literature and a credit to its author.

LABORATORY METHODS IN AGRICULTURAL BACTERIOLOGY. By F. Löhnis, Ph.D., Professor of Agricultural Bacteriology in the University of Leipsic. Translated by William Stevenson, B.Sc., N.D.A., N.D.D., Lecturer on Dairying to the West of Scotland Agricultural College, and J. Hunter Smith, B.Sc., N.D.A., N.D.D., Lecturer on Agricultural Chemistry and Bacteriology to the University College of South Wales and Monmouthshire. Cloth. Price, $1.75 net. Pp. 136, with 42 illustrations. Philadelphia: J. B. Lippincott Company, 1913.

This little manual is somewhat original. Undoubtedly the time is near when agricultural colleges will offer work in branches of agricultural bacteriology in addition to the courses offered at present in dairy bacteriology and soil bacteriology. The book gives directions for study of bacteria and their activities which are of special interest to agriculturists. The first part introduces the student to bacteriologic technic in general by useful experiments with air, water and foodstuffs. The bacteriology of milk naturally receives much attention. The work outlined includes study of the bacterial flora of milk, giving special attention to various forms of lactic acid bacteria. Methods of examination of butter and cheese are also given. In addition work on the bacteriology of manures and soils is outlined. On the whole the book is well arranged and the directions ample, but the English translation might be occasionally clearer and more concise. There are many useful illustrations fairly well reproduced.

THE MICROTOMIST'S VADE-MECUM. A Hand-Book of the Methods of Microscopic Anatomy. By Arthur Bolles Lee. Seventh Edition. Cloth. Price $4 net. Pp. 526. Philadelphia: P. Blakiston's Son & Co., 1913.

The additions to this manual have been mostly in small details and yet have increased the index by more than 700 new entries. The staining of neurofibrils is so important in the author's opinion that the sections on this subject have been almost entirely rewritten. The same is true with sections dealing with the blood and blood parasites. Some matters of theoretical interest have been omitted so that the book is of a more convenient size.

A PRACTICAL TREATISE ON MEDICAL DIAGNOSIS. FOR STUDENTS AND PHYSICIANS. By John H. Musser, M.D., LL.D. Sixth Edition. Revised by John H. Musser, Jr., B.S., M.D., Instructor in Medicine in the University of Pennsylvania. Cloth. Price, $5 net. Pp. 793, with 223 illustrations. Philadelphia: Lea & Febiger, 1913.

So rapidly has this subject grown and so frequent are the additions and changes, that a sixth edition of this valuable guide has been thought necessary. New sections have been added to the discussions on the disturbances of the internal secretions, and a new chapter has been added dealing with the various functional tests of organic efficiency. Other sections have been reviewed and much material abbreviated and condensed.

V. 6
1914

Miscellany

False Advertising

It is becoming increasingly evident that the enactment and fairly efficient enforcement of the national and state food and drugs laws has not secured to dealers and consumers freedom from fraud and deception in food and drug products.

False and misleading statements, designs and devices that appear in any other place than on the label attached to the package, or the false and deceptive methods used by designing agents, salesmen or manufacturers cannot be reached or prevented by resort to the food and drugs law and thus, in many instances, the public continues to suffer by reason of gross misrepresentation of one kind or another. Take, for illustration, the false, extravagant and, in their final effect, often harmful claims of many of the fake nostrums and appliances which appear in glaring advertisements in newspapers, circulars or pamphlets, or are given by word of mouth by an agent to a prospective customer: in such cases the food and drugs law is powerless to protect the purchaser.

An illustration of fraudulent advertising is that of the methods of a certain baking-powder company whose agents and demonstrators are instructed to make what is called "the water-glass tests." Several baking-powders are used, a small quantity of each being placed in a glass and water added. The baking-powder of this particular manufacturer contains a small quantity of albumin, and this powder containing the albumin foams to the top of the glass, the dissolved albumin making a more or less viscous liquid which retains the gas bubbles; the other powders which do not contain albumin simply foam up, the gas escaping into the air. The spectator sees the powder containing the albumin foam up to the top or over the top of the glass, while the other powders have but few bubbles; the opportunity is thus presented to the demonstrator or agent to represent to the housewife or prospective customer that the leavening power of the baking powder showing the glass full of bubbles is very much greater than that of the powders which do not make this showing, and thus a fraud is practiced in that the albumin powder is made to appear better than it really is, or conversely, that the other powders are made to appear worse than they really are. This test is deceptive, and is no indication of the raising power of the respective baking-powders. Such a demonstration is no test of strength; there is no reason why the consumer should pay more for baking-powder which foams and is retained in the glass because of the albumin content than he pays for powder of the same leavening power which contains no albumin and will, therefore, not foam and retain the bubbles when the water is added to it. The amount of albumin which is added to the baking-powder is only a fraction of 1 per cent., and its cost is negligible.

Patent medicines, food products and baking-powders should be sold for exactly what they are, and false representations of any kind are frauds on the purchaser. It is for these reasons that a false advertising law is imperatively necessary as a supplement to the food and drugs laws.—S. J. Crumbine, M.D., Secretary, Kansas State Board of Health.

Methods and Equipment in Milk Production

Rosenau in his book "The Milk Question" says that "clean milk may be produced with clean methods and poor equipment, but good milk cannot be produced with good equipment and poor methods." The truth of this statement is recognized by sanitarians, but experimental proof is scarce. Bulletin 365 of the New York Agricultural Experiment Station by Harding, Ruehle, Wilson and Smith shows that the authors have attacked this question and that they have brought to light some interesting facts. In certified milk dairies much time and labor is expended in washing and clipping cows and in keeping the interior of the stables in a scrupulously clean condition. The authors have obtained surprisingly low bacterial counts, in a large number of samples below 1,000 germs per cubic centimeter, without application of extreme precautions. If the number of bacteria is taken as index, the milk produced was of the highest quality. That milk of this quality is not generally produced under such conditions is illustrated by the fact that a local commercial dairy in which the equipment resembles that of the experiment station, except that steam is not available for treating utensils, quite uniformly turns out a product with a germ content of approximately 1 million germs per cubic centimeter. The difference between the two establishments is that at the experiment station the stable is kept cleaner, the cows are much cleaner, the milkers are clean and the utensils thoroughly steamed. One or more of these factors apparently contribute to bring about the difference in germ content.

The experiments were designed to test the influence of protected milk-pails, plastering or otherwise renovating the interior of the stable, clipping the cow's udder and flanks and cleaning the cows by hand or vacuum cleaner. The influence of protected pails was tested by covering two pails with cloth and leaving two pails uncovered, after having steamed the pails for fifteen minutes. While the milk from the covered pails averaged 922 germs per cubic centimeter, the milk from the uncovered pails averaged 2,391, an increase of 160 per cent.

In order to contrast the effect of old construction under unfavorable conditions with new construction at its best, the dust was allowed to accumulate on walls, ledges and stanchions until they were in as bad condition as would be tolerated under reasonably good barn management. Cows were milked under these conditions and after this study the ceiling and walls down to within 3 feet of the floor were covered with wire lath and two coats of cement. The last 3 feet were covered with zinc. Comparison of 212 samples showed that there was no measurable effect from the change of condition. Only after painting was there a decided reduction in number of germs.

The effect of clipping cows was tested next. The results show that clipping increased the probability of germs finding their way into the milk and no support is given to the idea that clipping the udder and flanks is a valuable aid in the production of sanitary milk. The authors think that brushing or otherwise cleaning the natural coat of the cow removes the loose dirt from the surface and other portion of the hair, while dirt at the base is retained. When the hair is clipped the cleaning process probably removes a larger proportion of dirt, but during the milking process there is little protective covering to retain dirt and bits of dead skin which are constantly breaking loose.

Comparison between cleaning cows with a brush and comb at the rate of two per minute with treatment with a vacuum cleaner at the rate of one per minute showed practically no difference in germ content.

The authors used all necessary precautions to have conditions for all experiments as nearly uniform as possible excepting in regard to the points to be determined.

The important fact which gradually is being recognized through these and other observations is that the production of clean milk with low germ-content is a simpler and less expensive process than has been believed, and it is desirable that the factors governing clean milk production should be better understood.

A Blackmailing Scheme

The following is from an editorial in the *Journal of the Indiana State Medical Association*, Nov. 15, 1913:

Our attention has been called to what seems to be a blackmailing scheme worked on unsuspecting physicians. We have in our possession three letters, exactly alike as to composition, handwriting and substance, with each signed by a different name and mailed from a different Indiana town. The letter, less names and signatures, is as follows:

..... 1913.

Dr.....
.....Indiana.

Dear Doctor:

You will no doubt be surprised to get this letter from a stranger, but oh, I am in such awful trouble that I must get help soon or I will go crazy.

I am in a family way, nearly two months gone, unmarried and deserted. That tells the whole miserable story in a few words.

I must get free at any cost, as I would much rather die than have it become known.

Won't you help me or tell me of some one you think would? If you will I will pay you well for it and be forever grateful to you for saving me from worse than death. Please do not be angry with me for asking your aid. I could not bring myself to go to one I know, and I heard a lady from here say you were a good doctor. I feel sure that if you knew all the circumstances and how much this means to me you would not condemn me.

I can make an excuse to get away for a short time and if you can assist me in any way please let me know at once how much it will cost me and how soon I can act.

Kindly use plain envelope.

Sincerely yours,

Miss ....

.....

.....

We are informed that if the letter is answered, a young girl soon puts in an appearance, and no matter what attention is given her, her visit is followed some weeks later by the visit of a man who claims to be a relative of the girl, and who makes the statement that the girl has lost her life through the effects of an abortion, and that on her person was found the doctor's letter, professional card, etc. It is then made to appear that things look bad for the doctor, and that suit will be brought unless the matter can be settled out of court. Whether the doctor is guilty or not, he sometimes is weak enough to yield to the temptation to avoid notoriety, and pays the price that is asked for silence. The fact that several Indiana physicians have received the letter which we herewith reproduce, all of the letters being in the same handwriting, but sent from different towns and with different signatures, lends color to the supposition that a well-devised scheme of blackmail is on foot, and members of the medical profession should be on their guard.

[This would seem also to be a case for the postal authorities.—ED.]

Surviving Superstitions among the Laity. — Physicians almost daily come across curious superstitions among their patients in regard to medical things which seem to belong to a less enlightened age. They are not always found among the ignorant and uneducated, but often among people of some education and otherwise fairly intelligent. The mental fog or obliquity signified may account in a measure for the vogue of cults and quacks. The *Weekly Bulletin* of the New York City Health Department sets forth some of these traditions and superstitions, racial, religious and otherwise, as encountered by the inspectors and nurses when urging parents to have various physical defects found among schoolchildren treated or corrected. When glasses are suggested for defective vision they are told that eye-glasses are a luxury, that they make the child look old, that they are worn for style, that the child will get used to them, that they will become a habit and the eyes will become weaker, or that they will interfere with the matrimonial chances of the daughter. Objection to the treatment of an ear that has a discharge may be based on the statement that the discharge allows the poison to escape and thus purifies the blood, or that at home the child hears too much anyway. If the parents are urged to have tonsils and adenoids removed it will be said that God put them there and if removed, the throat will be too wide, the air will rush into the lungs and cause inflammation; that the removal of the tonsils will interfere with speech, the singing voice or the procreative power, or that the children will become nervous and depressed, possibly with suicidal tendencies. Among the colored population voodooism is said to be frequent, for the attempt is made to cure diseases of the skin and eyes by the use of yarns of various colors. Suggestion that hair matted by dirt and lice be cut brings the protest that cutting the hair will prevent the growth and diminish the strength of the child. Pulling the teeth, it is said, will cause sore eyes; it is bad luck for any poor child to have gold or silver in the mouth. The "evil eye" is guarded against in some sections by the mother hastily licking the child's eyes and face, expectorating as she does so, or by sewing salt in the child's shirt, or tying red ribbon around the wrist or neck. Weakness of memory is attributed to eating the ends of the bread loaves, and bed-wetting is ascribed to playing with fire or matches before going to bed.

Medicolegal

Suit for Malpractice Not Barred by Judgment in Justice Court for Services

(Barton vs. Southwick (Ill.), 101 N. E. R. 928)

The Supreme Court of Illinois holds that an action for malpractice is not barred by a judgment before a justice of the peace in favor of the physician, in an action brought by him for the services rendered the patient, when the defense of malpractice is not interposed thereto.

It was charged in this case that the defendant was negligent and guilty of malpractice, in that having been called as a physician to attend and prescribe for her while she was suffering from some disorder of the generative organs, which had resulted in what is commonly known as "flooding," he improperly and wrongfully diagnosed her case as one of pregnancy, informed her she was about to have a miscarriage, and proceeded, by the use of various instruments, to attempt to remove the fetus supposed to be present; that the plaintiff was not pregnant, and the defendant was so careless and negligent in the use of such instruments as to lacerate the uterus, thereby compelling the plaintiff to submit to a major surgical operation and suffer the removal of her uterus. The defense in the trial court on the facts was that the defendant employed proper treatment to stop the flooding, that he did not diagnose the case as one of pregnancy, and that he did not insert any instrument into the uterus or attempt by the use of instruments to remove a fetus. The plaintiff recovered a judgment for $2,300, which the appellate court reversed, without considering the merits of the case, because it considered the action barred by a judgment in favor of the physician in a suit subsequently brought by him in a justice's court. Now the Supreme Court reverses the judgment of the appellate court, remanding the cause, with directions to consider the case on its merits.

The Supreme Court says that the New York courts have held that a judgment against a patient, before a justice of the peace, in favor of a physician for his services, is a bar to the prosecution of a suit for malpractice against the physician by the patient, even though no defense of malpractice or any attempt to set off or recoup damages on that account was made at the trial. The courts of some other states have followed the New York cases, but the majority of other courts have only partially followed the New York courts.

This court held in *Howell vs. Goodrich, 69 Ill. 556*, that a judgment in favor of a physician before a justice of the peace, where the defendant appeared and interposed the defense of malpractice, was a bar to the prosecution of a suit against the physician for malpractice, and it would seem from the fact that a justice of the peace in Illinois has no jurisdiction to entertain an action for malpractice, a party having pending or contemplating bringing such a suit in a court having jurisdiction to try and determine it could not be compelled to defend the suit by the physician before the justice of the peace or be barred from prosecuting his suit for malpractice. The inconvenience, if not injustice, of requiring the party to defend against a judgment in the justice's court was referred to in *Resseguie vs. Byers, 52 Wis. 650*, where the court said: "If the plaintiff were compelled to make his defense in the justice's court that the professional services were of no value and that he had been injured by the defendant's negligence, then it would follow that he must either split up his demand, so that there might be two suits, instead of one, on it, or content himself with merely defeating the claim for services, or limit his damages to $200—the extent of the jurisdiction of the justice.

Responsibility on Surgeon Independent of Count of Nurses for Removal of Sponges

(Davis vs. Kerr (Pa.), 86 Atl. R. 1007)

The Supreme Court of Pennsylvania reverses a judgment rendered for the defendant and orders a new trial because it does not consider that it was a sufficient defense merely to

V. 6
1914

show that he relied on a count of sponges made by a nurse. The court says that the plaintiff had the defendant perform, at a public hospital, an operation on her for tuberculous peritonitis, when one of the sponges inserted, a piece of gauze about 12 inches in length, through somebody's mistake or negligence, was not removed, but was allowed to remain in the abdomen after the wound had been sewed up, and was not discovered until more than nine months following the operation, when a second operation was required for the removal of the sponge that had been overlooked. In this case the defendant, preparatory to closing up the wound he had made, inquired of the nurses whether their count tallied, and whether all the sponges had been removed, and it was only on their replying affirmatively that he closed the wound. The evidence would support no other conclusion than that the defendant was misled by the mistaken count of the nurses.

Two questions were left to the jury to pass on: first, the credibility of the witnesses who testified that the defendant, before closing the wound, had inquired of the nurses whether all the sponges had been removed; and, second, whether the general system or practice of permitting the handling and counting of sponges by the nurses was reasonable. The verdict of the jury was an affirmative finding as to each. The court considers only the assignments of error relating to the rulings with respect to the second question.

The rule of practice in hospitals to have one nurse take charge of a carefully counted supply of sponges and hand them to the operating surgeon as required, while it is the duty of another nurse to receive them from the operating surgeon after each has served its purpose, and have the nurses, when the operation has been concluded, make comparison of those removed with those shown to have been introduced, required no submission to the jury. That the precautions it required in order to avoid the serious mistake of allowing a sponge to remain in the abdomen after the wound had been closed were not only reasonable, but wise, was not a subject of dispute. A verdict of a jury was not needed to give sanction to a rule or practice in surgery adopted and approved so universally by those skilled in the science of surgery. But, aside from this, however directly the negligence in this case might be traced to the nurses, the injury complained of could not be referred to the rule, but to the nurses' neglect in applying or observing the rule. Therefore, as thus understood, the reasonableness of the rule was not a question in the case.

The trial judge should have given the jury a very different understanding of what the reasonableness of the practice involved than that implied in his charge. He instructed them: "If you determine the custom was reasonable, or the practice, or whatever you choose to call it, custom or practice, among the surgeons, was reasonable, and Dr. Kerr followed it, then that is the end of the case, and you should return a verdict for the defendant. Stop there and return a verdict for the defendant." There was here an unavoidable implication that involved in the rule, as an essential part of it, is exemption of the operating surgeon from liability in all cases in which, as here, the nurses report that their count shows a removal of all the sponges, and the wound is thereupon closed up with a sponge because of their mistaken count of the sponges. Indeed, the whole case for the defendant was conducted on this theory, as appeared from the examination of the witnesses.

The third point of the defendant was as follows: "It being the undisputed evidence in the case that the counting of the sponges, both before and after an operation, was the duty of the nurses, and not of the operating surgeon, and it being further undisputed that the nurses reported to defendant, Dr. Kerr, that all the sponges had been accounted for, the verdict of the jury must be for the defendant." The judge's answer was: "That is affirmed, if you find that the practice or custom to have the nurses count the sponges is a reasonable and proper custom or practice." The instruction not only misconceived the purpose and object of the rule or practice, but treated it as a rule defining the whole duty of the surgeon, limiting his responsibility accordingly. Manifestly the only purpose in introducing the approved system or practice was to reduce as far as practicable the hazards to which the one operated on is exposed, by affording additional security against such accidents as here occurred. It certainly did not contemplate that the security provided was to be the only security on which the patient could rely for the avoidance of such mishaps, displacing entirely those which had before been recognized, among these the skill and observation of the operating surgeon, which had theretofore been employed and relied on to see that all the sponges had been removed. It may well be that because of the additional security provided the burden theretofore resting on the surgeon was reduced; that whereas before it was his duty to take accurate count of the sponges, this duty being devolved on the attending nurses, the surgeon is enabled to give closer attention to the work immediately before him. The court can well understand how better results can in this way be achieved. But before the counting of the sponges by the nurses, and before the wound is closed, is it reasonable to suppose that no duty rests on the surgeon to employ his skill or observation to assure himself that no foreign substance has been allowed to remain within? This defendant did not understand the rule or practice as relieving him from all responsibility in this regard; for he testified that he supposed he had removed all the sponges and pads, and that, "when those were all removed, then my next step was to confirm that supposition by the statement of the nurse whose duty it is to count the sponges, and to have her tally with the nurse who is handing the sponges to me, the clean sponges, or the ones that haven't been used." In making the observation which led him to conclude that he had removed all the sponges, he was strictly in the line of his duty, and acting in accordance with the rules of the improved practice, according to his own testimony. Granting the credibility of his testimony, the only question of fact remaining was: Did he, in making his observation, exercise reasonable skill, care, and prudence? The surgeons who testified in behalf of the defendant united in saying that it is only in most exceptional cases, if any, that the surgeon is warranted in exploring the restored parts after the count of the sponges by the nurses. The court can understand how this is a reasonable rule of practice; but it does not concern the court here.

The question related to what preceded the count by the nurses. Here the surgeon had reached the conclusion that he had removed all the sponges, a mistaken conclusion, but verified by the nurses' count. In reaching his conclusion, did he exercise ordinary skill? The court sees nothing in the evidence to warrant the inference that he did not; but, on the other hand, it finds nothing to warrant the inference that he did, which is far more important, since the burden of showing care was on him. Why was a foreign substance left in the parts which the operating surgeon should have removed? It was for him to acquit himself of negligence with respect to it. The sponge escaped his observation, why? Was it so hidden and concealed that reasonable care on his part would not have disclosed it, or were conditions such that in his professional judgment further exploration by him for sponges would have endangered the safety of the patient? In a word, did he do all that reasonable care and skill would require? Except as one or the other of these questions can be answered affirmatively from the evidence, the law will presume to the contrary, and attribute the unfortunate consequences to his contributing negligence. For all that appeared in the case, the retained sponge might readily have been discovered by the surgeon and reasonable prudence and care on his part would have avoided the accident. If this were so, clearly his negligence contributed with that of the nurses, and responsibility therefor in law attached.

Diet.—Every food determines a certain amount of digestive work, and when a given dietary is long-continued, definite and fixed, types of gland activity are set up which can be altered but slowly and with difficulty. In consequence, digestive disturbances are often instituted, if a change be made suddenly from one dietary regimen to another, especially from a sparse to a rich diet.—Pawlow.

Society Proceedings

CHICAGO MEDICAL SOCIETY

Regular Meeting held Dec. 17, 1913

The President, DR. C. P. CALDWELL, in the Chair

SYMPOSIUM ON SURGICAL CONDITIONS OF THE KIDNEY

Pathology of Surgical Conditions

DR. HENRY ALBERT, Iowa City, Iowa: Accessory renal arteries occur in about 20 per cent. of the cases. Israel and Mayo have called attention to these accessory arteries in the production of hydronephrosis. It is easy to understand how, if the kidney is hypermovable, the ureter may frequently kink over such an accessory artery. Horseshoe kidney is also another anomaly. Such a condition may often interfere with the development of a pregnant uterus, and a pregnant uterus, by pressure on the ureters, may interfere with the flow of urine. Complete anuria is apparently not very common. It is also interesting to know how long a patient may live with a complete anuria. Morris reports cases in which one patient survived seventeen, and another twenty-three days.

Quite obviously, the most common route of infection is the hematogenous by means of the renal artery, the so-called descending infection. We also have infection by the renal vein, but we ordinarily think of ascending infection by way of the ureter. It seems probable that that mode of infection is rather rare. It is possible, however, in two ways—either from passing into the bladder by continuity of tissue along the mucosa, gradually extending up to the kidney, or by the bacteria going into the urine and passing up the lumen. Against such infection there are two obstacles: first, the more or less constant flushing out of the ureters by the downward flow of urine; second, bivalve action of the ureter wall by passing the urine through it. In case of obstruction we have the flushing effect gone, and bacteria once gaining entrance past the area of obstruction may gain access to the kidney, and likewise the bivalve action may be destroyed.

Quite recently Sampson, by injection methods, demonstrated a communication between the blood-vessels of the kidney and of the bladder by means of anastomosis occurring with the blood-vessels of the ureter. He likewise demonstrated a communication between the blood-vessels of the kidney and bladder by way of the blood-vessels of the uterus and ovaries. Serota was in favor of the lymphatic route and has found that the lymph-vessels were principally distributed to the lower pole and pelvis of the kidney. Kumita finds that the most important lymphatic communication between the ureter and kidney was by way of the lymph-vessels communicating with the ureter, going first of all to the capsule of the kidney, and then to the kidney substance. This no doubt explains the cases that have been reported of a cystitis and a perinephritis with multiple abscesses of the kidney without any involvement of the ureter. Frank has also demonstrated some lymphatic communications between the ascending colon and the kidney in rabbits, but I have not seen any confirmatory evidence of his work. It seems from the work of Stewart on the production of infection in cases of transplantation of the ureter into the intestines, in which there is very good opportunity for bacteria to pass upward, that the most important of the ascending groups of infection is by way of the lymph-vessels rather than by way of the ureter.

While tuberculosis of the kidney is always a secondary process, nevertheless, tuberculosis, as regards the urinary organs, is no doubt almost always a primary process in the kidney. The chronic localized or ulcerative form appears to be for a long time a unilateral process; but if it continues for a long time it becomes more and more marked and also involves the other kidney. There is some question as to the route by which the other kidney is most affected, whether by ascending infection or by way of the blood-vessels. It seems most likely that it is an ascending process; that is, tubercle bacilli in the bladder gaining access through the ureter and passing up, but it seems from studying many specimens that the other is the more common route.

The most interesting of all kidney tumors is hypernephroma. It is supposed to have its origin in the adrenal structure, and is, as a rule, quite well encapsulated from the kidney. There has been some discussion by Adami and Wilson as to the origin of these tumors, but I believe that the term "hypernephroma" should be applied to those tumors, however rare, which really have their origin from the adrenal gland structure.

Methods of Diagnosis in Surgical Conditions

DR. BRANSFORD LEWIS, St. Louis: Many evidences, widely accepted as pointing to kidney disease, do not justly command such a position. Some have no relation to kidney disease, while others mislead as to which kidney is diseased and which is healthy. Nine-tenths of the instances of pain in the back come from muscular rheumatism or some such simple cause, without any involvement of the kidneys. Thus, this symptom, which is widely credited by the laity, is recognized as a fallacy in that light by the profession; but the profession in general is not so familiar with the oft-noted fact that pain arising in a diseased kidney may be transferred or reflected into the healthy one, affording material, but possibly very misleading, evidence in the case. This is a comparatively frequent source of error in renal surgical cases. In the necropsy room kidneys are found riddled and honeycombed with pockets and cavities containing stones, but with never a characteristic renal symptom in the record. On the other hand, I have seen numerous instances in which symptoms and signs were typical of renal or ureteral stone, and yet subsequent developments proved that no stone was present. The attack was due to uric acid crisis and renal irritation.

There is one condition of renal pathology in which symptoms seem to outweigh the signs in certain respects, namely, acute hematogenous infection, in which the affected kidney is so overwhelmed with the toxic effect that not only does it fail to give the alarm by pain, but also its functional activity may be suspended, and it fails to give material evidences in the urine, such as blood and pus. In such cases the symptoms are those of toxemia rather than of acute nephritis or pyelonephritis, as ordinarily understood. Yet even in these, as in cases of unilateral anuria from blocking of the ureter, the very absence of urine from that side, as determined by ureteral catheterization, is negative evidence of great value, and is to be learned by ureteral catheterization.

How are we to view and utilize the attendant symptomatology when present in studying renal cases? The many symptoms taken collectively should direct the physician's attention to the necessity of making a complete physical examination. The steps of a physical examination for disease of the upper urinary tract necessarily vary according to the circumstances of each case, but they should embrace measures and means that will furnish definite and accurate information regarding the physical condition and functional activity of the organs involved, together with those of the allied organs, the heart, liver and digestive apparatus.

Functional Tests and Their Importance in Renal Surgery

DR. E. G. MARK, Kansas City, Mo.: Most of the various tests proposed for the purpose of determining the functional capacity of the kidney have fallen into a state of desuetude. Cryoscopy, while severely criticized by Israel, Robson and others, is still employed by many. It should not be advocated as being absolutely dependable, but it is of great value. One of the strongest arguments in its favor is its practicability as a routine measure. Instruments of the highest degree of perfection must be employed, as even under the best conditions the possibility of error is great. The phloridzin test has been proved by Caspar and Richter to be valuable, but, as in cryoscopy, it can in no way be considered dependable. The newest test, the phenolsulphonephthalein test, has had a surprisingly wide acceptance, and the findings of the different investigators have been remarkably constant. It is simple of performance and requires no particular refinement of technic. It is my belief that it is by far the most reliable and valuable

V. 6
1914

of the so-called kidney function tests, and in my hands the findings have been most striking and dependable. I have by choice employed the intravenous method of injection, although I see no objection to the intramuscular technic. Microscopic amounts of blood in the urine may interfere with accurate readings. The advantages claimed for this test are: (1) complete elimination of the drug by the kidney; (2) early appearance of the drug in the urine following administration; (3) rapid excretion of the drug by the kidney, necessitating observation for only one or two hours; (4) brilliancy of the color which is imparted to the urine, and which is not readily influenced by the coloring matter of the urine itself; (5) the possibility with which this drug makes accurate quantitative examination possible; (6) simplicity of technic; (7) absolute non-toxicity of the drug; (8) non-irritating quality of the drug, and (9) absence of extra strain placed on the kidney during the test.

None of the tests are absolute or infallible, and repeated tests should be made. Further, let me urge the importance and common sense of thorough clinical observation, from all points of view, and the value and necessity of the older and generally accepted means of qualitative and quantitative urinalysis.

The Treatment of Surgical Diseases of the Kidney

DR. L. W. BREMERMANN, Chicago: The treatment of these diseases resolves itself into three very important factors, namely, when not to operate, when to operate, and what definite method of operation to employ. To my way of thinking, when not to operate is of greater consequence than any of the other methods of treatment already mentioned. It depends entirely on the diagnosis and the extent of the pathologic process—also on whether the lesion is unilateral or bilateral; on whether there may be a congenital renal defect demonstrated as a single organ, a fused or horseshoe organ, etc., and on whether the renal lesion may be secondary to a lesion elsewhere in the body, producing such an amount of constitutional impairment that surgical treatment would be followed by disastrous consequences. With correct recognition of the scientific facts discovered by our method of diagnosis, we may find conditions which will not warrant hasty treatment of a surgical character, yet with the institution of medical, hygienic and dietary measures the lowered resistance of the patient may be so improved and the functional capacity of the kidneys may be restored to such an extent that surgical treatment may subsequently be carried out safely.

From the point of view of when not to operate, the surgeon must weigh carefully all of the facts at hand; whether the condition is unilateral or bilateral, the degree of mobility, the amount of danger of destruction of the organ and the character of the symptoms. In bilateral renal tuberculosis it is the opinion of some that an operative procedure should be performed on the organ which shows the greater amount of destruction, yet great judgment from large experience is necessary before one can decide absolutely whether nephrectomy or a nephrotomy should be done. I believe that the patient has a far better chance of recovery if a nephrectomy is done in this type of cases—followed by constitutional hygienic and dietary treatment, including the careful and scientific administration of vaccines and tuberculin. In cases of definite unilateral tuberculosis, in which a nephrectomy is indicated from the study of the patient, careful after-treatment, including tuberculin, is always indicated, and must be carefully attended to, as it is the consensus of opinion among urologists that renal tuberculosis is secondary to tuberculosis elsewhere in the body, although many times the primary focus cannot be located clinically.

When to operate depends entirely on exclusion and one arrives at a definite opinion only after all of the factors revolving around the question of when not to operate have been considered and cast aside. The operative technic depends on the judgment of the individual operator to a great degree. I believe that for our opinion regarding the proper surgical procedure we are dependent on the estimation of the renal functional capacity more than on any other feature.

The treatment subsequent to all surgery on the kidney is vastly important. In all cases of renal pathology accompanied with infection, in which the bladder may be involved secondarily, a careful study of the case will clearly show the nature of the infection. Autogenous vaccines may be prepared and administered, together with hygienic and dietary measures. Likewise, in renal tuberculosis with mixed infection the same mode of treatment should be carried out, accompanied, of course, as before said, by the use of tuberculin. Every phase of the cases under observation should be taken into consideration. All points should be considered from the patient's point of view, and with the idea of prognosis continually in the mind's eye, for the purpose of reaching favorable end-results. The surgery of the kidney and urogenital tract has advanced more in the last decade than any other branch of surgery, from the point of view of diagnosis and treatment, placing the work on a thoroughly scientific basis, so that the mortality has been markedly reduced. Every method and diagnostic aid must be employed, so that this mortality will be further decreased and more favorable results be obtained, particularly on account of the possibility of earlier diagnosis from an increased knowledge of genito-urinary surgery among general practitioners.

DISCUSSION

DR. F. KREISSL: In the diagnosis of distentions of the renal pelvis, of hydronephrosis and pyelitis, with distention of the renal pelvis, I admit that the injection of collargol, followed by roentgenography, is a very efficient means of demonstrating the real condition present, but years ago I devised a simple means to arrive at the same diagnosis. If a ureteral catheter is introduced into a normal renal pelvis which is not distended, a few drops of urine are found coming out; but if the urine is found coming out as if through a catheter introduced into an overdistended bladder, the renal pelvis is distended. From the quantity collected in this way the exact size of the distended renal pelvis can be estimated.

I have noticed that whenever anything is said about the diagnosis of the function of the kidney, there is one point overlooked, namely, not to establish what the kidney will do ordinarily, but to establish what it will do when put under a special strain. It is important for us to know in what condition the other kidney is before we perform a surgical operation on the kidney. If we want to perform a nephrotomy it is important for us to know not only the condition of the kidney to be operated on, but also that of the other kidney. Why? The question might come up, Is the condition of the kidney to be operated on such that it is desirable to preserve it or that it becomes imperative to preserve it? I merely refer to those cases in which bilateral kidney disease exists. When it comes to nephrectomy, it is absolutely necessary for us to know what the kidney will do under ordinary circumstances, if functionally intact, and if it has enough latent or reserve force to take up the functions of both kidneys after the operation.

It is agreed by a large majority of men engaged in kidney surgery that cryoscopy, not alone, but in combination with experimental polyuria, is a reliable means of establishing a diagnosis. I have not done very much work with the phenolsulphonephthalein test, but from what I have seen and heard I believe that it ranks practically as high as the combination of cryoscopy and experimental polyuria.

DR. WILLIAM FULLER: I think that if early diagnosis of kidney and ureteral lesions is accomplished we shall change our surgery of the ureters and kidney, and that we shall see more of those cases which indicate a partial nephrectomy, for such lesions as tuberculosis of the kidney. I am sure that in some cases there are isolated foci of tuberculosis in the kidney, and that such patients will recover just as quickly with partial as with total nephrectomy. We do not think of removing the entire shaft of the bone for localized tuberculosis; neither should we think of removing a kidney for tuberculosis in one part of the organ. Early diagnosis is the thing in kidney surgery. If we can make it accurately, and early enough, we shall find an opportunity for partial nephrectomy.

AMERICAN ASSOCIATION FOR STUDY AND PREVENTION OF INFANT MORTALITY

Fourth Annual Meeting, held in Washington, D. C., Nov. 14-17, 1913

(Continued from page 66)

Heat and Infant Mortality

DR. J. W. SCHERESCHEWSKY, Washington, D. C.: The most significant phenomenon in connection with the mortality of infants is the great increase of their deaths in the summer months. This increase is most marked in countries where the winters are cold and the summers hot. It may be absent in lands where the summers are habitually cool or in the tropics where there are but slight variations in the mean temperature throughout the year. In countries with cold winters an increase in infant mortality is perceptible whenever the mean temperature rises above 20 C. (68 F.). The deaths of infants show a striking parallelism with the curve of maximum temperatures, being numerous when the daily maxima are high and diminishing where they are low. This parallelism is most strikingly manifest in the first part of the summer. This phenomenon, however, holds good only when we compare the total infant deaths with the temperatures. On the other hand, when the deaths from intestinal diseases alone are compared with the maximum temperature, the early summer heat brings no great increase in their number. The death-curve from these diseases lags behind the curve of maximum temperatures to rise with almost explosive violence later in the summer, reaching its apex in July or August, according to the locality, and slowly declining through September and October. From 80 to 90 per cent. o. the infants dying from intestinal diseases are artificially fed.

The great summer mortality of infants can be explained by three hypotheses only. The infants are killed: (*a*) directly by the heat; (*b*) by the action of stale or dirty milk and the contained bacteria, or (*c*) by specific infections.

The action of heat as a direct cause in the death of infants has hitherto been greatly underestimated. The lethal action of heat is a function not so much of the maximum and mean temperatures of the external air as of the indoor temperatures. The action of dirty and stale milk in causing the death of infants, while undoubtedly a contributory factor, has been given an importance which has overshadowed other factors of equal or greater significance. There is evidence to show that a certain proportion of infant deaths is due to specific infections, in the dissemination of which, contact infection and flies doubtless play a part. As a result, future activities for the prevention of infant mortality must concentrate themselves to a greater extent on the question of housing, especially with respect to the factors of overcrowding, narrow streets and presence or absence of thorough ventilation. The general public should be educated as to the importance of these factors in causing infants' deaths, and especially as to measures which will prevent children from suffering from the heat. Breast-feeding must still be regarded as a most, if not the most, important factor in reducing infant mortality.

DISCUSSION

DR. T. B. COOLEY, Detroit: There is a very obvious relation between summer heat and infant mortality. A great portion of the increased mortality during the summer is due to the action of summer heat in lowering the power of resistance of the child to certain factors, such as overfeeding, ill-judged feeding and spoiled food. Then comes the lower resistance of the child to infection and to the poisonous food elements. The troubles are chiefly indirect. We do not yet understand just how that indirect effect is produced. We do know that a great part of that effect can be avoided by improving housing conditions.

It is a very striking fact that almost the only thing which has been done that has had the effect to lower summer mortality has been the improving of housing conditions rather than improvement in the milk conditions. Housing conditions, heat, moisture, etc., inside of the house, and summer hygiene, aside from the question of feeding, must be attacked first. I think that a great deal of harm has been done by overemphasis on bad feeding. A large number of the general practitioners still believe that summer diarrhea is due to bad milk. So long as the profession continues to attribute summer diarrhea to that cause, not enough attention will be paid to the other causes of high summer mortality of infants.

DR. I. A. ABT, Chicago: Several years ago I presented a paper on this subject at a meeting of the Section on Diseases of Children of the American Medical Association, which met in Los Angeles, and a great many doctors wondered what I was talking about. Those from New Mexico and Arizona and Southern California said that they had no such experience; they had no summer mortality. So there must be something besides the heat. There must be such an element as humidity that is not thoroughly understood. I think that some of these conditions are due to the debility caused by the heat. Every one is prostrated and not able to do his best, and that is true throughout the temperate zone. I presume that the baby feels it, especially if he is living in an insanitary home, or has been treated badly all winter. Babies bear extremes of temperature badly. Nobody has studied the effect that cold would produce. I do not believe that a baby would be able to stand excessive cold any more than excessive heat. Every one knows that arctic explorers are rendered feeble, and many die on account of the effects of long-continued cold, and those who travel in the tropics tell us that the debility is very great. Dr. Epstein has had a large number of deaths in his infant asylum. It seems to me that we make little progress when we tell people that dirty milk is bad and clean milk is good. Then without good and sufficient reasons are we willing to say it is not the milk at all? I think the best and the purest milk is none too good for the babies. I am in favor of pure certified milk.

DR. HERMAN SCHWARZ, New York: We want not only good milk, but we want everything else that is good. Dr. Cooley certainly means that we should have pure milk, and I agree with him that pure milk is not the only thing. We need proper housing and adequate ventilation. In certain towns where the wind was in a certain direction, summer mortality was not known. As long as our houses are built as they are, block on block, we shall have summer infant mortality. We have not had enough cases yet to talk about. If there is a high temperature in the beginning of the summer, say in June, it will be found that infant mortality will be greater in July and August than it would be if June were not so hot. Those children have something in the beginning that reduces their vitality, and later on they cannot resist the heat and they die under even less heat as a result of the continued tax.

DR. W. C. WOODWARD, Washington, D. C.: It is late in the day to begin to discuss the relation of milk to infant mortality. The data pertaining to that subject are too numerous and too definite to permit of two opinions to any one who is familiar with the subject. This does not mean that there may not be other causes that contribute to infant mortality. It does not mean that housing is not one of these contributing causes. I should like to offer to any member of the association who is interested in statistical study a statement published in the annual report of the health department of the District of Columbia, showing the number of deaths of children for the period from 1882 to 1902, by days, during the first five days of life. You will find in the same table for the same dates a statement of the dry-bulb thermometer, a statement of the wet-bulb thermometer, and the wind at 8 a. m. and 8 p. m.

DR. F. W. PINNEO, Newark, N. J.: When we started a rather extensive infant-consultation service in Newark, many of the infants that came to us the first summer had diarrhea and continued to have it in spite of what we gave them. The next summer very few came with diarrhea, and during the past two summers we hardly ever had a case of diarrhea. I believe that the diarrhea at first was due to the fact that the babies had been fed improperly and with poor judgment. The main thing is to feed the infant correctly from birth.

V. 6
1914

We have emphasized in our work that at the first approach of warm weather the feeding must be cut down.

Infant Mortality in the Light of Eugenic Ideals

DR. H. E. JORDAN, Charlottesville, Va.: In organic development both heredity and environment are absolutely essential; moreover, the action of the one complements that of the other. If the environment is baneful or deficient in any one of many possible ways, one expression of the effect will be in increasing infant mortality. Similarly, if the inheritance be of low quality or defective the prevalence of infant mortality will be extended. About 10 per cent. of our population is estimated to be defective and so a racial menace. If we succeed in raising all infants, obviously some unfit stock will be raised to reproduce its defective type, thus working injury to the race. Theoretically, a certain small amount of differential infant mortality must obviously be a good thing. But even if morally and socially allowable—which it is not—no discriminating procedure would be practical, for it is impossible by present means to distinguish absolutely and certainly in early infancy between the potentially fit and strong and the grossly unfit and weak. We cannot lower our ideal. The same serious effort must be made to rear all infants. But at the same time we must recognize the fact that some unfit stock, reproducing in geometric ratio, is thus saved to reproduce its defective type and to contaminate the race. This simply means that our efforts for infant conservation must be extended to embrace an interest also in potential parents and to seek means to prevent reproduction on the part of those seriously deficient racially. Our efforts may defeat our aims unless the mass of the babies we save are racially of sound stock.

DR. HENRY SCHWARZ, St. Louis: Taking care of the health of prospective mothers and preparing them physically and mentally for their task of nursing and raising their offspring is the first and the most important step in the conservation of infant life. At present only a small percentage of expectant mothers receive proper attention during gestation, and every year thousands of mothers and babies die or are permanently injured, whose lives and whose health could have been preserved by reasonable prenatal care. Factors at work to bring about a betterment of conditions includes improvements in obstetric teaching: establishment and extension of obstetric dispensaries, and attempts to impart much-needed information to expectant mothers through the missionary educational work of prenatal nurses, and through the publications of the United States Children's Bureau.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

December, LXVIII, No. 432, pp. 1017-1244

1 Cesarean Section: Consecutive Series of Cases. A. B. Davis, New York.
2 *Thyroid Tissue Tumors of Ovary: Report of Case. G. W. Outerbridge, Philadelphia.
3 *Histogenesis of Sarcomatous Change in Uterine Fibromyomas. S. H. Geist, New York.
4 Treatment of Sterility by Dudley-Reynolds Operation. F. C. Holden, Brooklyn.
5 Adventitious Tissues of Abdominal Cavity. R. T. Morris, New York.
6 *Diagnostic and Therapeutic Value of Renal Catheter. K. I. Sanes, Pittsburgh.
7 *Renal and Ureteral Calculi. H. D. Furniss, New York.
8 Exophthalmic Goiter and Pregnancy. G. Gellhorn, St. Louis.
9 *Treatment of Placenta Praevia by Cesarean Section. When, If Ever, Is It Justifiable? R. McPherson, New York.
10 *Advantage of Cesarean Section Over Other Procedures in Border-Line Cases. J. W. Poucher, Poughkeepsie, N. Y.
11 *Significance of Hematuria and Its Management. J. G. Sherrill, Louisville, Ky.
12 *Acute Unilateral Hematogenous Nephritis. C. S. Foster, Pittsburgh.

2. **Thyroid-Tissue Tumors of Ovary.**—In certain ovarian tumors, as for instance those cited by Outerbridge, there occur areas of tissue which cannot be distinguished histologically from that of the thyroid. Between tumors which show a complex teratomatous structure, containing among numerous other elements a small amount of thyroid tissue, and those composed solely of this, there is no sharp dividing line. All these tumors are of similar genesis; they are teratomas, with varying degrees of suppression of the ectodermic and mesodermic elements. The large majority of these tumors are clinically benign; the few which are malignant show, in most instances, areas of unmistakable irregularity in their cellular structure, or give other histologic evidence of having assumed a destructive type of growth. The thyroid tissue in the ovary is of no functional significance, at least in the vast majority of cases, and these growths give rise to no symptoms other than those which would be produced by any type of ovarian tumor of equal size. The term "teratoma thyroidiale ovarii" is suggested as the most satisfactory designation for those tumors in which the thyroid tissue forms the dominant feature. Almost fifty recorded cases are analyzed.

3. **Sarcomatous Change in Uterine Fibromyomas.**—In a study of 250 cases of uterine and cervical fibromyomas Geist found that twelve showed sarcomatous changes of various types. In most instances (9 cases) the myomas were multiple with a solitary focus of sarcomatous change. In but one instance were there multiple sarcomatous areas. Microscopically the sarcomas presented either pure spindle-cell type (5 cases), pure round-cell (1 case), or a mixture of both (6 cases). The latter type contained varying numbers of giant cells. In two of his twelve cases sarcomas were found in fibromyomas, where he could trace the progressive stages of the transition from normal muscle into sarcoma. The narrow muscle cells with their slender nuclei become larger, broader and more rounded, the nuclei also become larger, the chromatin gradually increasing in amount. In some cells the chromatin is irregularly arranged in small masses, in others it is more uniformly distributed in one large rounded or elongated mass occupying almost the entire cell. Occasional mitotic figures are seen in the transitional areas, the number of which gradually increases until in the midst of the sarcoma tissue one can often find two or three figures in each field. In the transitional zones the cells keep within the bounds of the normal fascicular arrangement and direction of the muscle bundles. In these two cases Geist was able to trace the transition from the myomatous tissue of the fibromyoma into sarcoma, and he says there can be no doubt raised as to the origin of the sarcoma from the muscle cells of a fibromyoma.

6, 7, 9, 10, 11 and 12. Abstracted in THE JOURNAL, October 4, pp. 1321 and 1322.

Annals of Surgery, Philadelphia

December, LVIII, No. 6, pp. 721-986

13 *Studies in Blood-Pressure before, during and after Operations with Reference to Early Recognition, Prevention and Treatment of Shock. J. C. Bloodgood, Baltimore.
14 *Tumors of Carotid Body: Report of Case. J. G. Callison and J. E. Mackenty, New York.
15 Early Diagnosis of Hydronephrosis by Pyelography and Other Means. J. W. T. Walker, London.
16 Value and Limitation of Diastase, Urea and Phthalein in Estimating Renal Function in Association with Ureteral Catheterization. J. T. Geraghty, L. G. Rowntree and F. S. Cary, Baltimore.
17 Case of Pelvic Kidney: Diagnosis before Operation. G. J. Thomas, Rochester, Minn.
18 Myoma of Stomach. J. H. Outland and L. Clendening, Kansas City, Mo.
19 Primary Sarcoma of Large Intestine. R. E. Farr, Minneapolis, Minn.
20 Non-Rotation of Intestine. A. S. Vosburgh, New York.
21 Anatomy of Case of Carcinoma Recti. T. W. Todd, Cleveland.
22 Strangulation of Undescended Testis. C. E. Farr, New York.
23 Case of Sarcoma of Chest Wall. J. F. Baldwin, Columbus, Ohio.
24 Retrorectus Laparotomy Incision and Closure. J. J. Moorhead, New York.

13. Abstracted in THE JOURNAL, May 21, p. 1737.

14. **Tumors of Carotid Body.**—The authors review sixty cases of tumors of the carotid body recorded in the literature,

including their case. In the 60 cases, 4 have been found at autopsy. Two were examined post mortem, although the existence of a tumor had been known when death occurred from other cause. The remaining 54 cases have come to operation. In 4 the tumor was laid bare, only to find such extensive involvement that nothing could be done. All three carotids were ligated in 32 cases, the external only in 7 cases. In 15 cases the tumor was dissected away from the common or internal carotids after ligation of the external. In 8 cases recurrence took place, in 6 of these after the tumor had been dissected away from the blood-vessels, in 2 cases after complete removal of all the carotids. In 1 patient examined after death there were metastases in the liver. Of the 54 patients operated on, 42 have recovered and 12 died. But to these 12 deaths must be added 4 from recurrence and 6 other speedy deaths in prospect from recurrences known to exist when the case was reported, or 22 deaths in 54 cases. In 1 other case the patient probably died as a result of the tumor.

The causes of death have been: In 4 cases, pneumonia, in all of which the pneumogastric was divided or resected at the operation; in 3 cases, hemorrhage; in 2 cases, cerebral anemia; in 1 case, acute edema of the lungs; not stated, in 1 case; in 1 case, septicemia; in 1 case, infection and hemorrhage. In addition to this mortality, however, other accidents have arisen in the patients who survived. In 4 cases, the patients have had hemiplegia with aphasia. In 4 the voice has been affected, and there has been more or less dysphagia. In one there has been such tracheal irritation as to produce a constant cough. In 5 the tongue has deviated to one side. In 4 there has been an altered pupil, in 1 conjunctival injection. In 4 cases the face has been party paralyzed.

Archives of Diagnosis, New York

October, VI, No. 4, pp. 309-404

25 Value of Roentgenoscopy in Obstructions of Esophagus. W. H. Stewart, New York.
26 *Cardioneurosis. R. Abrahams, New York.
27 *Manifestation of Hypothyrosis not Heretofore Described. H. Stern, New York.
28 *Periodical Soreness of Tongue and Gums—an Early Symptom of Pernicious Anemia. H. Stern, New York.
29 Diagnosis of Cervical or False Rib. S. P. Goodhart, New York.
30 Susceptibility of Cataleptic Suggestion an Early Sign in Typhoid. E. E. Cornwall, Brooklyn.
31 Diagnosis of "Arteriosclerosis." L. F. Bishop, New York.
32 Diagnosis and Prognosis of Gonorrheal Arthritis. S. Epstein, New York.
33 Differential Study of Prurigo Nodularis and Urticaria Perstans. R. L. Sutton, Kansas City, Mo.
34 *Is There Any Reason Why Ophthalmo-Tuberculin Reaction Should Be Abandoned? J. Gutman, Brooklyn.
35 Symptomatology and Diagnosis of Malignant Strictures of Rectum. E. Ruge, New York.
36 *New Diagnostic Sign for Lesions at Pylorus. P. G. Skillern, Philadelphia.

26. **Cardioneurosis.**—Generally speaking, Abrahams says, cardioneurosis planted on an organic lesion is fairly amenable to treatment. The organic trouble gives one an excuse for putting the patient to bed, and rest in bed is an essential part of the treatment of neurosis. Disturbance minus a lesion is also a reason for sending the patient to bed, but the patient will argue against it and his opinion, in the long run, prevails. Some things, at least, are within our power to recommend: early to bed; avoidance of excitement; abstinence from coffee, tea and tobacco; scrupulous regard for overfeeding and sluggish action of the bowels. Cardiac stimulants such as digitalis, strophantus and the members of the coffee family are harmful, unless, of course, the disturbance is a natural expression of a heart lesion; if so, that would be a matter of diagnosis. Sedatives are more useful and the best to Abrahams' knowledge is ammonium bromid in doses of 15 grains three times a day, or one dose at bedtime. Massage and hydrotherapy are useful; the Nauheim bath, both the real as well as the homemade one, is useless. Diuretin in 5-grain dosage three times a day is valuable in cases in which the neurosis is associated with arteriosclerosis. With causes so varied, with manifestations so complex, Abrahams concludes that each case of cardioneurosis shall be considered an entity and be studied in its kaleidoscopic patterns.

27. **Hypothyrosis and Urinary Tract.**—In four cases of hypothyrosis with urinary symptoms, that Stern examined cystoscopically, anatomic alterations of apparent hypothyrogenous origin could be demonstrated. That the alterations in the bladder or urethra were entirely dependent on the hypothyroid state was evidenced by their decline and increase corresponding to the fall and rise of the other hypothyroid phenomena on the exhibition or withdrawal of thyroid preparations. That the urinary symptoms were caused by the hypothyroid modification of the local structures became manifest by their disappearance when the local process abated, and their reappearance on the recurrence of the mucosa infiltration. The mucous membrane was edematous and swollen. Stern suggests that in cases of frequent or painful micturition a general hypothyrotic state with manifestations in the lower urinary tract must be thought of, and that a cystoscopic examination of the latter be made. Further, that, possibly frequent or painful micturition may be an early, and as such for a time the only subjective phenomenon of import in hypothyrosis, and that a cystoscopic examination be undertaken. Finally he points out that enuresis in children as well as in adults may be due to a hypothyrotic or kindred origin, that the cures of such cases after the administration of thyroid substance, as reported by French and other physicians, may be due to the disappearance of myxedematous swellings from the lower urinary tract, and that in instances of persistent bedwetting a cystoscopic investigation be insisted on.

28. **Early Symptom of Pernicious Anemia.**—Periodical soreness of the tongue, gums and palate, Stern believes, is without question the most reliable of the inaugural symptoms of pernicious anemia. For some time this symptom has been known to occur in the course of the affection, at a stage when its clinical and hematologic picture is fully developed. Stern has observed this symptom in the initial stages of two cases of genuine pernicious anemia, one of which has since terminated lethally, and in another apparent case of the affection which is still under observation in which, however, the blood-picture is not absolutely characteristic.

34. **Ophthalmo-Tuberculin Reaction.**—Gutman favors the ophthalmo-tuberculin reaction. He says that the test is absolutely without danger, safe, very reliable and serves the purpose as well if not better than the Pirquet. He does not know of a single case in which the test has proven dangerous. He cautions, however, that the test should never be applied to an eye unless nothing wrong is found about it. If one eye is in good condition while the other one is not, the test may be applied to the good one.

36. **Diagnostic Sign for Lesions at Pylorus.**—A small, circumscribed spot of "wincing" tenderness, Skillern says, is a common sign in gastric ulcer. With the patient reclining and the stomach empty, mark on the skin the site of the "wincing" tenderness. Now inflate the stomach with air. The pylorus shifts, carrying the spot of "wincing" tenderness with it. The lesion, then, must be in the pylorus and not elsewhere. This lesion is probably an ulcer of the pylorus. If the spot of tenderness does not move, the pylorus is either not involved or, if involved, is firmly anchored by adhesions, and these adhesions are due more often to infection of the biliary tract than to pyloric ulcer.

Arkansas Medical Society Journal, Little Rock

December, X, No. 7, pp. 167-190

37 Treatment of Trifacial Neuralgia by Intraganglionic Injection of Alcohol (Hartel's Method). U. Maes, New Orleans.

Boston Medical and Surgical Journal

December 25, CLXIX, No. 26, pp. 929-956

38 Medical and Social Aspects of Mental Disease Due to Alcohol: Notes of Conference Held at Psychopathic Hospital, Boston, before Legislative Commission on Drunkenness, Nov. 24, 1913.
39 Work of Massachusetts Legislative Commission on Drunkenness, 1913. M. J. Murray, Boston.
40 Report of Clinical Demonstration of Alcoholic Mental Diseases, with Remarks on Current Practice at Psychopathic Hospital, Boston. H. M. Adler, Boston.
41 Conjunctival Anyosis to Blue Light as Shown in Alcoholic Cases. G. E. Eversole, Boston.

V. 62
1914

42 After-Care and Moral Suasion Work with Alcoholics in Outpatient Department of Psychopathic Hospital. A. W. Stearns and M. C. Jarrett, Boston.
43 Institutional Requirements for Acute Alcoholic Mental Disease in Metropolitan District of Massachusetts in Light of Experiences at Psychopathic Hospital. E. E. Southard, Boston.
44 Alcoholic Amentia. A. W. Stearns, Boston.

California State Journal of Medicine, San Francisco

December, XI, No. 12, pp. 475-510

45 Debt of Human Embryology to Practitioner. A. W. Meyer, Palo Alto.
46 The Ideal Hospital. D. Gochenauer, San Diego.
47 *Implantation of Joints. L. Eloesser, San Francisco.
48 Toxic Effects of Salvarsan. G. E. Ebright, San Francisco.
49 Iritis. V. H. Hulen, San Francisco.
50 Auricular Fibrillation. H. W. Allen, San Francisco.
51 Futility of Cardiac Stimulants in Shock. S. T. Pope, San Francisco.
52 Traumatic Retroperitoneal Displacement of Duodenum; Absolute Obstruction Developing Gradually Therefrom; Gastrojejunostomy; Duodenumjejunostomy; Recovery. L. W. Allen, San Francisco.
53 How to Read the Pneumothorax Manometer. E. Von Adelung, Oakland.

47. Implantation of Joints.—Implantation of joints in Eloesser's opinion is a feasible and useful procedure. Much of the implanted bone becomes necrotic; it is not shed, however, but amalgamates, and is absorbed and replaced by living bone. A small part of the implanted bone remains alive, viz: the superficial inner and outer layers. Much of the implanted periosteum and endosteum remains alive, and is probably the source of the new bone. A subsequent arthritis deformans does ont seem to develop in the new joints. The fresh cadavers of patients who have died suddenly of a non-infectious disease should be used. Absence of infectiousness should be assured by bacteriologic and serologic tests. Eloesser cites two cases.

Canadian Medical Association Journal, Toronto

December, III, No. 12, pp. 1027-1122

54 Diseases of Stomach. A. McPhedran, Toronto.
55 Retention of Gastric Contents. C. D. Aaron, Detroit, Mich.
56 Pyloric Spasm. C. G. Stockton, Buffalo.
57 Clinical Aspects of Gastric Disease. C. F. Martin, Toronto.
58 Frontal Tumors. R. W. Mann and J. Loudon, Toronto.
59 Bone Staple-Plate. J. K. McGregor, Hamilton, Ont.

Cleveland Medical Journal

December, XII, No. 12, pp. 801-881

60 Surgery of Seminal Vesicles. J. B. Squier, New York.
61 Efficiency Test of Dispensary Treatment of 100 Cases of Gonorrhea. H. L. Sanford, Cleveland.
62 Complement Fixation Test in Gonococcus Infection. H. L. Rockwood, Cleveland.
63 Possible Surgical Control of Kinetic System. G. W. Crile, Cleveland.
64 Edema of Macular Area of Retina with Report of Case. C. C. Stuart, Cleveland.
65 Case of Concussion Cataract. D. A. Prendergast, Cleveland.
66 *Mechanism of Action of Hexamethylenamin. P. J. Hanzlik, Cleveland.

66. Hexamethylenamin.—Following the administration of hexamethylenamin, Hanzlik found that the substance itself can be detected in all of the body fluids. Free formaldehyd does not appear in any of the body fluids which are neutral or truly alkaline. This includes blood, cerebrospinal, pleural, pericardial and synovial fluids, aqueous and vitreous humors, saliva, bile and some urines. Urines which are truly acid and contain hexamethylenamin practically always contain formaldehyd. Urine is the only body fluid, except gastric juice, which exhibits true acidity, hence it is here only that liberation of formaldehyd from hexamethylenamin can take place. The same general law applies to pathologic fluids. From the correlation of chemical experiments with bacteriologic and clinical data, Hanzlik states that hexamethylenamin acts as an antiseptic only in proportion as it liberates formaldehyd, and that this liberation can only occur when the reaction is truly acid.

Free formaldehyd is an efficient bactericide in comparatively high dilutions. Such an efficient concentration can be attained in normally acid urine. It is only in vesico-urinary conditions where one can expect any beneficial therapeutic action after the administration of hexamethylenamin, because urine is the only body fluid whose reaction may be altered, if necessary, to such an extent that liberation of formaldehyd with other body fluids in as much as their neutrality or a slight tendency to alkalinity is rigidly maintained. No beneficial therapeutic responses therefore are to be expected in meningeal infections; infections of the cerebrospinal fluid or about the spinal cord, bile or biliary passages; or of the infections of the ear, eye, synovial, pericardial or pleural fluids. On account of the rapid absorption of hexamethylenamin and of the usual alkalinity of the bowel contents, no bactericidal action can be expected in the intestinal canal.

It was also shown in Hanzlik's experiments that the administration of monosodium phosphate (NaH_2PO_4) does not alter the reaction of the fluid from the intestines, and that the hexamethylenamin present under such conditions passes through the bowel unchanged. However, the administration of the monosodium phosphate increased the true acidity of the urine and the concentration of formaldehyd in such a urine containing hexamethylenamin is markedly increased. Therefore in the urine an opportunity presents itself to increase the efficiency of hexamethylenamin therapy. This can be accomplished by the administration of the monosodium phosphate until the urine when tested with the phloroglucin reagent gives a reaction for formaldehyd.

This test indicates quite closely the turning point in the reaction of urine. That is, at approximately the point of neutrality or beginning alkalinity it will no longer give a positive formaldehyd test with a hexamethylenamin urine, but as soon as such a urine begins to be truly acid, it gives a positive test for formaldehyd. A urine which has been previously alkaline, that is, possessing a hydrogen ion concentration of 7.2, can be rendered acid, that is, increased to a hydrogen concentration of 4.85 within approximately five hours after the administration of 13 grams (200 grains) of the phosphate. If the occurrence of diarrhea is objectionable, the dosage of the phosphate may be reduced. On the other hand, the administration of alkalies, such as sodium bicarbonate ($NaHCO_3$) or potassium citrate, entirely prevents the benefits of hexamethylenamin; and it is, therefore, irrational to prescribe them together.

Georgia Medical Association Journal, Augusta

December, III, No. 8, pp. 251-286

67 Cerebral Syphilis. R. C. Swint, Milledgeville.
68 Acute Osteomyelitis: Importance of Early Diagnosis and Treatment. F. K. Boland, Atlanta.
69 Cesarean Section. E. C. Davis, Atlanta.
70 Surgery Among Insane Patients (Female)—Report of Cases. Y. A. Little, Milledgeville.
71 "Cancer Uteri, Hysterectomy, Return, Cure—Two Cases." E. C. Cartledge, Atlanta.
72 Imperfect Development a Factor in Genesis of Diseases of Women. B. S. Moore, Atlanta.
73 Lumbar Puncture. S. R. Roberts, Atlanta.
74 Indications for Cesarean Section. R. M. Harbin, Rome.

Iowa State Medical Society Journal, Clinton

December, III, No. 6, pp. 337-409

75 Ocular Traumatisms. G. F. Harkness, Davenport.
76 Immunology: Its Progress and Limitation of Its Practical Application. J. C. Chimacher, Clarinda.
77 Serum and Vaccine Therapy. E. A. Merritt, Council Bluffs.
78 Treatment of Lateral Curvature of Spine. A. Steindler, Des Moines.
79 Albuminuria. M. H. Thielen, Grundy Center.
80 Limits in Operability of Malignancy. F. Rosenbladt, Des Moines.
81 Present Status of Mental Hygiene and Mental Control. M. N. Voldeng, Cherokee.

Journal of Medical Research, Boston

December, XXIX, No. 2, pp. 147-366

82 *Specific Paratuberculous Enteritis of Cattle in America. K. F. Meyer, Philadelphia.
83 *Relation of Hodgkin's Disease to Lymphosarcoma and Endothelioma. J. Oliver, San Francisco.
84 *Primary Hodgkin's Disease of Spleen (Dorothy Reed Type). H. W. Wade, New Orleans.
85 *Diet Studies in Transplantable Tumors. E. V. Van Alstyne and S. P. Beebe, New York.
86 *Studies in Anaphylaxis: V. Desensitization: Its Theoretical and Practical Significance. R. Weil, New York.
87 Adenomas of Islands of Langerhans. R. M. LeComte, U. S. Army.
88 *Histologic Evidence of Disease Importance of Pulmonary Anthracosis. S. R. Haythorn, Pittsburgh.
89 Hydropic Condition of Rabbits' Livers. C. J. Bartlett and M. R. Smirnow, New Haven, Conn.

90 Bacillus Aerogenes Capsulatus in Epidemic of Dysentery and in Normal. S. T. Orton, Boston.
91 Bacteriologic and Environmental Factors in Pneumonias of Lower Animals with Special Reference to Guinea-Pigs. T. Smith, Boston.
92 Etiology of Epizootic Abortion in Mares. K. F. Meyer and F. Boerner, Philadelphia.

82. **Specific Paratuberculous Enteritis of Cattle.**—The paratuberculosis enteritis found in America, Meyer says, is identical with the disease of European countries. By intravenous inoculations with material from the mesenteric lymph-nodes the disease has been reproduced in young calves (30, 92 and 96 days of age). The incubation time was from four to eight months. One animal died from the disease twelve months after the infection. Feeding experiments were not successful. The natural infection probably takes place in the early days of life by contact with infected mothers or surroundings. The possibility of an infection in certain pastures, where *B. paratuberculosis* leads a saprophytic life, Meyer believes, cannot be denied, and is probably of importance for the infection of adults. *B. paratuberculosis* can be cultivated on solid and liquid culture media containing glycerin extracts of acid-fast bacilli, particularly tubercle bacilli or *B. phlei*. Six strains have so far been isolated. The growth is slow and only possible at body temperature. A culture medium consisting of equal parts of tuberculin and bouillon, with a 2 per cent. agar and 1 per cent. serum, is the best for primary isolations. Meyer maintains that the use of antiformin should be limited to contaminated material. The bacterioscopic examination of feces and rectal scrapings is only of diagnostic value in about 40 per cent. of the cases in the advanced stages of the disease. Avian tuberculin is an unreliable reagent for paratuberculosis. "Paratuberculin" and perhaps some of the serum tests may prove in the future to be more reliable. *B. paratuberculosis* is, in certain respects, related to different representatives of the acid-fast group of bacteria.

83. **Relation of Hodgkin's Disease.**—It is held by Oliver that Hodgkin's disease must be classed with the lymphosarcomas and endotheliomas of the lymph-nodes as a neoplastic process. The following facts compel this conclusion: (a) the similarity, and in cases identity, of the histologic process; (b) the early and constant development of malignancy (invasion of capsule and veins); (c) the ultimate formation of true metastases, partly at least by the blood-stream. The endotheliomas of the lymph-nodes are of relative frequent occurrence and are classed by Oliver as endothelioma medullare, endothelioma scirrhosum and endothelioma cylindricum (Winigradow), or better by the classification of Ewing as diffuse, alveolar and perivascular.

84. **Primary Hodgkin's Disease of Spleen.**—In Wade's case there was at no time any enlargement of the superficial lymph-nodes, nor was there evidence of any lymphatic hyperplasia within the mediastinum or abdominal cavity. The disease was of long standing in the spleen as was evidenced by the gross and histopathologic appearance. Therefore, Wade believes, it should be considered one of primary Hodgkin's disease of the spleen, a condition quite unique, but one, he says, that occurs more frequently than has been held. Some of the reported cases of primary splenic sarcoma may easily have been unrecognized Hodgkin's disease.

85. **Diet Studies in Transplantable Tumors.**—It has long been a popular belief that the character of the diet of a group or race of people bears an important relationship to the incidence of malignant growths. The experiments reported by Van Alstyne and Beebe may be divided into two classes: I. Those experiments in which one group of animals was kept on a special diet for from three weeks to two months before being planted with the tumor. A group of thirty-four white rats of uniform age and weight was divided, without exercising special selection, into two groups of seventeen rats each. One group was placed immediately on the special non-carbohydrate diet which consisted of casein and lard. The second group was continued on the ordinary laboratory diet, consisting of bread. This feeding was continued for a period of six weeks, at which time the animals were all planted from the same seed.

In this experiment the tumor was a Buffalo sarcoma. A large mass of the tumor was removed, finely pulverized and suspended in salt solution. Of the emulsion thus prepared each rat received one cubic centimeter by subcutaneous injection. The animals of both sets were in good physical condition at the time of planting the tumor. I. Non-carbohydrate diet: 17 rats planted: 7 takes: 4 retrogressed; 2 killed by the tumor; 1 died from unknown causes. II. Experiments in which the special feeding of the animals was begun on the same day that they were planted. In this group there was a total of 27 rats, divided into two lots, 13 being placed on the regular diet and 14 on the non-carbohydrate diet. The same diet was used as in the previous experiment, and the animals were fed for six weeks before being planted. The methods of planting these rats was the same as that followed in experiment I, a freshly removed tumor serving as the seed for all of the animals: 14 rats planted: 1 take: 1 rat took the tumor, which grew to large size and killed the animal. Regular diet: 13 rats planted: 7 takes: 3 died from unknown causes; 4 killed by the tumor. The results in this experiment are so striking that the authors claim one can scarcely avoid the conclusion that the preparation of one group of animals by feeding on a non-carbohydrate diet has enabled the animals to resist the tumor.

86. **Studies in Anaphylaxis.**—The conclusion drawn by Weil in a previous paper is verified, namely, that the mode of sensitization determines certain important factors in active anaphylaxis. Guinea-pigs sensitized by the injection of fractional amounts of alien serum present a prolonged incubation period, require a relatively small dose of antigen to produce death and contain in their serum relatively few specific antibodies. On the contrary, guinea-pigs sensitized by repeated large injections of alien serum present an abbreviated incubation period require a much larger dose of antigen to produce death, and have many more antibodies in their serum. To these data is added the fact that after active sensitization by fractional amounts of alien serum, the minimal desensitizing dose is relatively very small. After sensitization by repeated doses, the minimal desensitizing dose is many times as large as in the previous case, and may even very largely exceed the minimal lethal dose there determined. After the passive sensitization of guinea-pigs by small and by large amounts of immune rabbit serum, respectively, it is found that the minimal desensitizing doses are small and large respectively. Hence the deduction is drawn that in active anaphylaxis also the amount of the minimal desensitizing dose is determined by the relative number of specific antibodies possessed by the animals. Repeated desensitizing injections ("doses subintrantes") are subject to the same conditions as control the effectiveness of the single dose. Moreover, it is shown that recovery from severe anaphylactic symptoms, or from the administration of a dose fatal for control animals, does not necessarily avert a fatal result on the administration of a larger dose on the succeeding day.

Cases are cited to show that human beings are sensitized, in the same way as are guinea-pigs, by the repeated injection of large amounts of therapeutic serum, given intraspinally, and may be killed by a subsequent injection. The desensitization of these individuals offers a complex problem, which is discussed in detail. Protection against the toxic effects of primary injections presents a problem of the same character, but probably much less difficult of solution.

88. **Disease Importance of Pulmonary Anthracosis.**—Summarizing the various points indicating the disease importance of anthracosis which Haythorn has gathered from histologic evidence, he draws the following conclusions: Moderate anthracosis in an otherwise normal lung is not in itself detrimental to health. In tuberculosis and granulomatous conditions in which the reactions are chiefly centered in focal lesions of the tissues, the anthracotic condition is either entirely passive or is active in assisting healing, in that it is an additional stimulus to fibrosis and encapsulation and in that it aids in the localization of the process through the obliteration of the lymph spaces. In acute inflammatory conditions in which the lymphatics are important for proper

V. 6
1914

resolution, anthracosis becomes seriously detrimental, because of the obliteration of these spaces.

Laryngoscope, St. Louis

November, XXIII, No. 11, pp. 1041-1120

93 Eight Cases of Purulent Meningitis Operated on by Haines' Method. Post-Mortem Findings. E. W. Day, Pittsburgh.
94 Congenital Absence of Both Ears. R. C. Lynch, New Orleans.
95 Edelmann's Acoustics for Otologists. J. Hollinger, Chicago.
96 Cavernous Sinus Thrombosis: Report of Case. R. McKinney, Memphis, Tenn.
97 Unusual Case of Meniere's Disease Associated with Nephritis. A. L. Guthrie, Lancaster, O.
98 Untoward Results following External Operation on Frontal Sinus. R. H. Skillern, Philadelphia.
99 Empyema of Frontal Sinus with Exposed Dura Cured by Obliteration of Sinus. T. C. Worthington, Baltimore.
100 Nerve Trunk Anesthesia and Carbolization in Nasal Surgery. G. Sluder, St. Louis.
101 Intratracheal Anesthesia from Standpoint of Nose, Throat and Oral Surgeon with Description of New Instrument for Catheterizing Trachea. H. H. Janeway, New York.
102 Kuhn Method of Peroral Narcosis. F. Hazlehurst, Baltimore.

Maine Medical Association Journal, Portland

December, IV, No. 5, pp. 1617-1660

103 Artificial Pneumothorax. F. J. Welch, Portland.
104 Football and Physical Efficiency. E. W. Gehring, Portland.

New York State Journal of Medicine, New York

December, XIII, No. 12, pp. 627-694

105 *Treatment of Large Ventral Hernia by Inversion of Hernial Sac: with or without Opening into Peritoneal Cavity. I. S. Haynes, New York.
106 *Rôle of Ovarian Disease in Production of Sterility. G. W. Kosmak, New York.
107 Acute Thyroiditis as Complication of Acute Tonsillitis. C. F. Theisen, Albany.
108 Results of Salvarsan Therapy in Malignant Syphilis Praecox, Syphilid of Palms and Gumma of Tongue. H. F. L. Ziegel, New York.
109 Enuresis and Chronic Digestive Disturbances. F. Van Der Bogert, Schenectady.
110 Experiences with Direct Laryngoscopy, Bronchoscopy and Esophagoscopy. J. McCoy, New York.
111 Plea for More Frequent Use of Lumbar Puncture. E. J. Wynkoop, Syracuse.
112 Case of Dacryocystitis Presenting Several Complications, Including Orbital Abscess and Optic Neuritis. A. C. Snell, Rochester.
113 Technic of Labyrinth Operation. E. B. Dench, New York.
114 Economic and Social Aspect of Deafness. H. Hays, New York.
115 Importance of Testing Accommodation as Routine Measure in Refraction Work. A. Duane, New York.
116 Acute Phlegmonous Cholecystitis: Report of Case with Gangrenous Enteritis. A. E. Roussel, Philadelphia.
117 Infant Feeding. H. Rulison, Albany.

105. **Treatment of Ventral Hernia.**—The details of Haynes' inversion method are as follows: Dissect the skin from the sac and the skin and fat from the fascia for a distance of from one to two inches beyond the margin of the hernial orifice. Whether the skin shall be entirely removed from the sac depends on whether the sac is to be inverted entire or not. The preceeding case is the only one in which it was necessary, or seemed necessary, to accomplish the technic without opening the sac. In all the other cases the sac was opened to deal with some attending complication. In these instances more or less skin was removed by the usual eliptical incisions with the redundant portions of the sac itself. After the complications have been dealt with and the sac (peritoneum and thin fascia) has been sutured with No. 2 plain gut, doubled, the inversion of the hernia and coaptation of the margin is carried out. For this purpose two rows of sutures of heavy kangaroo tendon are necessary. Both rows are placed mattress-wise with deep and wide bites in the external fascia, the two rows "break joints" with each other. Retention sutures of either bronze wire, silk-worm or chromic gut are used to take the strain off the mattress sutures. The wire is preferred in the larger hernia and the gut may be used in the smaller ones. These sutures are placed in the figure-of-eight manner and brought out through the skin at a distance of from two to four inches from the skin incision where they are tied firmly over the rolls of gauze or a large rubber tubing (quill suture). A drain of rubber tissues should be inserted before the skin is closed with silk-worm or plain gut.

106. **Ovarian Disease and Production of Sterility.**—Forty-five cases have been collected by Kosmak from various operators as regards the relief of sterility and also on the effect of the removal of one ovary on the sex of the child. There were seven cases of extra-uterine pregnancy in the series in which the ovary was removed in connection with the ruptured tube, otherwise the ordinary cystic degeneration served as the reason for the oophorectomy except in a few instances where salpingo-oophorectomy with adhesion was given as the cause. In nine cases a uterine suspensory operation was done and likewise an appendectomy. In twenty cases children were born previous to the removal of the ovary. As regards the sex of children born subsequently, the sex changed in four cases and remained unchanged in seven where children of one sex had been born previously. In three cases with more than two previous children of different sexes, the sex after oophorectomy followed the preponderating sex previously. In one case in which 5 female children had been born there were 2 males and 1 female in the succeeding births, and in another in which 4 females were born a male subsequently resulted.

An attempt to relate the sex to the removal of one or the other ovary was therefore unsuccessful, as in the series of 45 cases there were 16 male and 13 female infants following the removal of the right ovary, and 16 male and 15 female infants following the removal of the left ovary—a fairly equal division of the sexes.

In the 19 cases of the series in which pregnancy had not preceded the operation, the oophorectomy was done in 3 women while still single and in 7 in a year or less after marriage. In the remainder the operation was done in from four to ten years after marriage. In 3 cases pregnancy took place in less than a year, in 10 cases in less than two years and in 3 cases between five and six years, although several abortions occurred in one of the latter series. As regards the sex of these children, in cases in which the left ovary was removed there were 8 males and 9 females subsequently born, and in those instances in which the right ovary was removed there were 5 males and 8 females.

Kosmak emphasizes that the question of sterility in an otherwise healthy woman must depend on an aggregation of factors rather than on a single lesion and that in every instance the entire pelvic contents must be subjected to careful study. In a certain proportion of cases, however, the removal of an ovary which is diseased undoubtedly contributes to increased function in the other, as evidenced by an improvement in the menstrual conditions and the greater possibility of subsequent pregnancies. It would appear as if the question of sex was not dependent on the side from which the individual ovum is derived and that whether the left or right ovary is removed the proportion of sexes in subsequent children is about equal.

New York Medical Journal

December 27, XCVIII, No. 26, pp. 1241-1280

118 Cancer Research Hospital. J. Ewing, New York.
119 Ileocolitis with Meningeal Symptoms. A. L. Goodman, New York.
120 Serodiagnosis (Abderhalden) of Cancer and Pregnancy. C. F. Ball, Rutland, Vt.
121 Chronic Suppuration of Middle Ear. J. Auerbach, New York.
122 Resorts We Visited. H. P. Collings, Hot Springs, Ark.
123 *Acromial Breathing as Aid in Diagnosis of Apical Pulmonary Tuberculosis. N. Magida, New York.
124 Etiology of Pellagra. P. Bartholow, New York.
125 *Treatment of Bronchopneumonia in Children. A. Goltman, New York.

123. **Acromial Breathing in Tuberculous.**—In looking over the histories of 52 cases, consisting of 28 in the first stage, 14 in the second and 10 in the third, Magida found acromial breathing present in all the first stage cases, in 8 of the second and 2 of the third. It would seem that it is a valuable method in first stage cases, and since that stage is the most important from a diagnostic point of view, and as the method is so easily acquired, the author believes it should be universally employed. It should also help toward ascertaining the advanced stages of tuberculosis, as the further advanced a case is the less probability there is of getting evidence from auscultation of the acromion process.

This method was first described by Robert Abrahams, who observed that in apical tuberculosis auscultation at the acromion process increases and amplifies all the auscultatory signs which are ordinarily obtained over the apices. The hard rubber bell is placed over the acromion process of the scapula, where it joins the acromion end of the clavicle. In thin people this anatomic part is not well covered with muscle and it is sometimes hard to place the bell of the stethoscope in such a manner as to exclude all external sounds. This, however, is overcome by pinching the skin up so that the bone fills the bell of the stethoscope; the surrounding folds of the skin act as a barrier to foreign sounds. Joint creakings which are sometimes heard are easy to distinguish from râles. The value of this method is best appreciated if the apices are examined first, the acromion later, and then the difference in the sounds compared.

125. **Bronchopneumonia in Children.**—Goltman outlines his course as follows: Support the patient's strength with nourishing liquid diet and let the temperature and pulse be guides as to whether stimulants should be used. The ice pack will reduce a temperature in quick time. When mucous rattling is heard, when the respirations are increased and dyspnea and cyanosis are present, aim at one thing—keep the respiratory center alive. Plunging the child into a warm bath and then wrapping it up in a cold sheet, pouring hot and cold water alternately from a height on the patient's chest will cause the child to cough and expel the mucus. Goltman has found that these measures are followed by good results.

Ohio State Medical Journal, Columbus

December, IX, No. 12, pp. 575-646

126 Treatment of Hemorrhagic and Septic Conditions with Normal Blood-Serum. L. A. Levison, Toledo.
127 Management of Placenta Praevia with Report of Case. H. T. Sutton, Zanesville.
128 Warts and Moles: Their Etiology and Treatment. W. I. Lefevre, Cleveland.
129 Some Colonic Sigmoidal and Rectal Conditions. E. A. Hamilton, Columbus.
130 Herpes Zoster Ophthalmicus Complicated by Ophthalmoplegia. R. B. Metz, Cleveland.

Tennessee State Medical Association Journal, Nashville

December, VI, No. 8, pp. 301-349

131 *Inguinal Adenitis; Treatment. E. T. Newell, Chattanooga.
132 Orthodontia. N. C. Leonard, Nashville.
133 Suppurative Appendicitis. J. H. Carter, Memphis.
134 Appendicitis without Symptoms. M. Goltman, Memphis.
135 Hebra Panacea. W. B. St. John, Bristol.
136 Neurasthenia. R. O. Huffaker, Chucky City.
137 Amebiosis. T. A. Mitchell, Nashville.

131. **Inguinal Adenitis.**—To say that all cases of inguinal adenitis should be treated by incision and drainage, or that all cases should be treated by complete enucleation, Newell states, would be incorrect. Each case must be treated according to the condition found, to-wit: a simple, single bubo should be incised, curetted or wiped out; with the application of iodin or carbolic acid and gauze packing. Large masses of glands that belong to the superficial group, that are more or less circumscribed, that contain pus, but are not completely broken down, come out readily and easily in one ball-like mass when enucleated. And in Newell's opinion, this is the treatment of election in such conditions. If the deep glands are involved they should be removed cautiously along with the superficial one. The wound is closed and drainage is supplied at the lower angle. Large masses of glands with peri-adenitis and edema of subjacent parts, especially if they contain multiple abscesses, do better with free incision, curettage, partial enucleation and drainage. Tight bandaging, aspiration and the local application of heat, etc., have their place in the early treatment (abortive).

West Virginia Medical Journal, Wheeling

December, VIII, No. 6, pp. 179-229

138 Relation of Nasal Accessory Sinuses to One Another. J. W. Murphy, Cincinnati, O.
139 Little Talk on Dentistry with Suggestions to Physician. J. W. Parsons, Huntington.
140 The Pulse. C. O'Gracy, Charleston.
141 Dermatology in London. W. S. Robertson, Charleston.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

December 13, II, No. 2763, pp. 1521-1568

1 *Clinical Significance of Spontaneous Hemorrhage as Early Sign of Disease. G. R. Murray.
2 *Early Diagnosis and Operative Treatment of Carcinoma of Cervix. H. W. Wilson.
3 Influences of Venereal Diseases. C. J. Macalister.
4 Work of Cambridge Research Hospital. T. S. P. Strangeways.
5 Significance of Phleboliths. J. Hall-Edwards.
6 Appendicectomy in General Practice. H. S. Elworthy.
7 Intestinal Obstruction due to Coil of Worms. D. H. Vickery.

1. **Spontaneous Hemorrhage Sign of Disease.**—Bleeding from the nose is such a common event says Murray that even a sharp attack of epistaxis does not give rise to alarm unless it be unduly prolonged. In some persons it is readily started by a very slight injury and in others it occurs from time to time without any apparent reason, and careful examination may reveal no nasal disease to account for it. When epistaxis occurs with fever it may be an early symptom of enteric fever, especially if it is associated with frontal headache. The occurrence of epistaxis in granular kidney and arteriosclerosis is well known. A sudden attack of epistaxis occurring in a man who has passed middle age may be the first indication that he is suffering from granular kidney. This symptom naturally leads one to examine the urine, take the blood-pressure and make an ophthalmoscopic examination. Hemoptysis is by far commonest in pulmonary tuberculosis; it may be the earliest symptom to attract attention. Any hemorrhage from the lungs would naturally lead Murray to suspect pulmonary tuberculosis and take every pains to ascertain if it is present. An aneurysm or new growth in the lung or a pulmonary infarction may all cause a spitting of blood. Bronchial hemorrhage may be brisk and yet never recur. Hemorrhage from the gums may sometimes be mistaken for hemoptysis.

When blood is passed with the urine it may come from any part of the urinary tract, from the kidney down to the urethra. When blood comes from the kidney it is uniformly distributed through the urine. If small in amount it may make the urine "smoky," and there may be the "beef-tea" deposit; if abundant it may impart a bright red color to the urine. Blood which comes from the bladder or prostate appears chiefly at the end of micturition, as may be demonstrated by getting the patient to micturate into three different glasses in succession. Hematuria may occur in tuberculosis of the kidney and in the early stages of a new growth of the kidney, and may be produced also by the presence of a renal calculus. It may occur also in acute Bright's disease and in chronic granular kidney; in the former case the cause is generally obvious. A profuse attack of hematuria should always lead to a careful examination of the urine, the blood-pressure and the heart, to ascertain whether there is any evidence of a chronic granular kidney. In essential renal hematuria recurring attacks of hematuria take place, though it is rarely fatal. In cases in which an operation has been performed, the kidney has been found to be quite healthy, and in some the attacks have ceased after a simple nephrotomy.

In some cases presenting similar clinical features the hemorrhage has proved to be due to an angioma of a renal papilla, but these, Murray says, are not cases of "essential renal hematuria" and require a nephrectomy to remove the source of the hemorrhage. There is, however, another variety of attacks, of hematuria in which a single attack, or two or three attacks of hematuria occur close together, without subsequent recurrence. These may be termed examples of a good deal of anxiety at the time, as the loss of blood may be considerable. The absence of subsequent recurrences during a long period of years of good health shows clearly that in these cases there is no structural change in the kidney. Gastro-intestinal hemorrhages are in some cases very difficult to explain. Apart from bleeding due to actual ulceration, there is the hematemesis, which occurs in the early stages of splenic anemia or from the rupture of an esophageal varix in cases of alcoholic cirrhosis of the liver.

V. 6
1914

Secondary anemia and prolonged ill-health arise in some cases from small repeated hemorrhages, of almost daily occurrence, from hemorrhoids; the hemorrhage has been neglected by the patient and allowed to go on unchecked for years before medical advice is sought. In these cases the hemorrhage is not of importance as an indication of disease nor on account of the amount lost on any single occasion. It is the repeated small losses which impose so great a strain on the blood-forming organs that a profound secondary anemia results.

2. **Carcinoma of Uterus Cervix.**—The rules which Wilson has adopted for his guidance in these cases are as follows: (1) The iliac glands are not removed if, after the abdomen has been opened, they are not found to be enlarged, and the parametrium is clinically healthy. (2) If the patient's general condition is good and the parametrium is clinically infected, whether the iliac glands are enlarged or not, the larger operation is performed. (3) If a large mass of iliac glands is found, the operation is not proceeded with. By this time infection has spread far up the ovarian lymphatics to the lumbar glands, and no operation will cure the patient of her disease. Wilson emphasizes that something can be done, in an advanced case of the fungating type of growth where a large mass fills the vagina, and the patient is suffering from pain, a profuse, purulent vaginal discharge, and hemorrhage.

Of the various methods of treatment employed, Wilson believes none are better than a thorough use of the cautery, and the removal of all the exuberant portions of the growth by this means. The diathermic cautery is the best instrument to employ in Wilson's opinion, as the extent of its action is much more under the control of the surgeon than is the case with the actual cautery. The necrosis also, which the former instrument produces, is much less likely to be followed by an intense inflammatory reaction at the periphery of the growth, or by bursts of secondary hemorrhage later as the sloughs separate. Ligature of arteries is also useful in those cases in which hemorrhage and discharge are the prominent feature if the abdomen has been opened for the exploration of a growth which subsequently proves to be inoperable, it is quite a simple matter to ligature both main internal iliac arteries and one or both groups of ovarian vessels. This will cause a marked improvement in the symptoms for a time, but the results are not sufficiently permanent to justify a laparotomy for this procedure alone.

Dublin Journal of Medical Science

November, III, No. 503, pp. 313-391

8 Examinations, Examiners and Examinees. W. Osler.
9 Tests for Liver Function. G. E. Nesbitt.
10 Cancer of Rectum. W. Taylor.

Edinburgh Medical Journal

December, XI, No. 6, pp. 481-576

11 Three Cases of Dyspituitarism. A. W. Falconer.
12 Scarlet Fever in Aged. C. R. Ker.
13 Rumpel-Leede Phenomenon in Diagnosis of Scarlet Fever. G. Richardson.
14 Case of Auricular Flutter. G. D. Mathewson.
15 Cardiac Mechano-Therapeutics. E. F. Cyriax.

Indian Medical Gazette, Calcutta

November, XLVIII, No. 11, pp. 417-456

16 Ankylostomes and Ankylostomiasis in Bengal. C. Lane.
17 Dysentery in Raipur Central Jail, C. P. R. T. Rodgers.
18 Treatment of Snake Poisoning. F. Wall.
19 Case of Cobra Poisoning: Recovery. P. C. White.
20 Epidemic Cerebrospinal Meningitis. Sudhonarain.

Journal of Tropical Medicine and Hygiene, London

November 15, XVI, No. 22, pp. 345-360

21 Hepatic Abscesses Which Open Upward Through Lung. J. Cantlie.
22 Case of Equine Trypanosomiasis Characterized by Occurrence of Posterior Nuclear Forms. J. W. S. Macfie and J. E. L. Johnston.
23 Case of Dermal Leishmaniasis in British Guinea. E. P. Minett and F. E. Field.

Lancet, London

December 13, II, No. 4711, pp. 1677-1742

24 Some Common Errors in Diagnosis of Nervous Disease. S. A. K. Wilson.
25 *Cancer of Prostate. P. J. Freyer.
26 Jackson's Pericolic Membrane: Its Nature, Clinical Significance and Relation to Abnormal Mobility of Proximal Colon. J. Morley.
27 Method of Removal of Carcinoma of Prostate. R. Howard.
28 *Myocardial Lesions of Rabbits Inoculated with Streptococcus Viridans. E. C. Rosenow and C. Coombs.
29 Tuberculosis Statistics. H. Clark.
30 Three Cases of Glanders. H. M. M. Woodward and K. B. Clarke.

25. **Cancer of Prostate.**—Freyer is of the opinion that a prostate attacked by malignant disease previous to its undergoing adenomatous enlargement is rarely, if ever, capable of enucleation suprapubically by his method of dealing with hypertrophy of the prostate, or of being effectually removed by any other method, for the simple fact that by the time the symptoms declare themselves the disease has already passed through the capsule of the gland and invaded the adjacent structures. When, however, cancer supervenes on, or is due to degeneracy in, a previously enlarged adenomatous prostate, as very frequently happens, and the patient comes under observation while the prostate is still movable and the adjacent structures uninvolved—that is to say, while the malignant disease is still confined within the capsule of the gland—the prostate can, and should be, enucleated. Freyer's experience of operation under such conditions being most favorable. It is sometimes impossible to give a definite diagnosis of malignancy in such cases before the removal of the prostate, though the presence of hard nodules in the gland, combined with the rapid progress of the symptoms, will arouse strong suspicions which, Freyer says, should be communicated to the patient's relatives before operation is undertaken.

28. **Inoculation with Streptococcus Viridans.**—Small blocks from the right and left ventricles and auricles from nineteen hearts of rabbits in whom inoculation with the endocarditic strains of *Streptococcus viridans* had caused endocarditis were cut and studied by Rosenow and Coombs. Fourteen of these showed some microscopic evidence of invasion of the myocardium of the following character: In those hearts in which the animal succumbed soon after the injection of a large dose of the organism, masses of Gram-positive cocci were actually demonstrated within the smaller blood-vessels of the myocardium, and in some of these there was little or no inflammatory reaction. In other sections it was possible to discern that the cocci were undergoing destruction and phagocytosis by the endothelial cells of the small blood-vessels in which they became fixed; cocci, single, paired, and in short chains, were occasionally to be seen within the endothelial cells. In one or two instances the cocci were included within the endothelial cells. In one or two instances the cocci were included within a thrombus, which obliterated the lumen of the vessel. In none of the sections was there any evidence of profuse invasion of the myocardium by cocci.

In the majority of hearts, however, cocci were not seen in the myocardium, and the only evidence of invasion of that tissue lay in the presence of reactive changes varying in degree, but not transgressing above a certain maximum. These reactive phenomena expressed themselves primarily, in many cases exclusively, in changes in the vascular endothelium. The mildest evidence of intravascular irritation consists of a swelling of the endothelial cells, which appear to change from a flat to a cuboidal state. The next stage in their reaction is proliferative; changes of this type are particularly rife in the smallest arterioles and in the capillaries, also perhaps in perivascular lymph-vessels. A step beyond the proliferative process lies disintegration of the vascular endothelium, associated with thrombosis, and sometimes with break-up of the vessel wall—the result being the creation of an area having a small hyaline clot as its center, around which endothelial cells are irregularly arranged, constituting a zone separating the abnormal focus from the surrounding tissues. Apart from these various phases of endothelial activity—swelling, proliferation and degeneration—there was little sign of inflammatory reaction.

These phenomena are closely similar in several of their essential features to those witnessed in the following streptococcal infections: human rheumatic infection, experimental rheumatic infection, and experimental infection with hemolytic streptococci. The following fundamentals are common to all these infective processes: the myocardium is frequently invaded, the path of invasion lies through the myocardial

blood-vessels, the endothelium of the blood-vessels plays a primary and predominant part in the defensive reaction, and the cocci are not found to have escaped in numbers beyond the vascular endothelial cells.

Practitioner, London

December, XCI, No. 6, pp. 745-896

31 Varieties of Facial Spasm and Their Treatment. E. F. Buzzard.
32 Genital Prolapse. C. Lockyer.
33 Nephrectomy. C. A. Ball.
34 Principles of Serum and Vaccine Therapy and Their Application to Diseases of Children. D. N. Nabarro.
35 Fact and Fancy in Cancer Research. C. E. Walker.
36 Venereal Diseases as We See Them To-Day. J. E. R. McDonagh.
37 Recent Advances in Dermatology. J. M. H. Macleod.
38 Imperforate Conditions of Rectum and Anal Canal and Their Treatment. L. E. C. Norbury.
39 Local Treatment of Vincent's Angina with Salvarsan. J. D. Rolleston.
40 Diagnostic Value of Bismuth Bolus. F. Emrys-Jones.
41 So-Called Movable Kidney Disease. P. Hicks.
42 Enteritis in Turkish Cholera Camp. H. E. S. Stiven.
43 Chronic Mucocele. A. N. Robertson.

Annales de Gynécologie et d'Obstétrique, Paris

November, XL, No. 11, pp. 625-688

44 *Uncontrollable Vomiting of Pregnancy; Two Cases. G. Lepage and Tiffeneau.
45 Dermoid Cysts of Vesico-Uterine Pouch. Vautrin.
46 Rupture of Ovarian Cysts; Eight Cases. Tédenat.
47 Abderhalden's Pregnancy Reaction. (Le diagnostic physiologique de la grossesse.) R. Labusquière.

44. Uncontrollable Vomiting of Pregnancy.—In the first of the two cases described two injections of serum from a normal pregnant woman aided materially in the cure, the diuresis increasing at once afterward and the pregnancy proceeding undisturbed to term. In the second case both epinephrin and serotherapy failed to relieve, and labor had to be induced. The metabolic findings in these cases apparently indicate that the disturbances in the metabolism of nitrogen are the consequence of the starvation resulting from the uncontrollable vomiting. The greater these disturbances the graver the condition. The influence of treatment by alkalines is well founded although the alkali only modifies symptoms without removing the cause. When an alkali can be easily administered it is a useful adjuvant, but it is especially useful during the period of convalescence and return to normal conditions. The starvation seems to bring on an acid intoxication.

Archives Générales de Chirurgie, Paris

November 25, VII, No. 11, pp. 1281-1408

48 *Permanent Drainage of Ascitic Fluid into Subcutaneous Cellular Tissue. Perinoff.
49 Coagulation of Extravasated Blood in Joints after Trauma. L. Delrez.
50 *Operative Treatment of Gastric Crises of Tabes. P. Mauclaire.

48. Permanent Autodrainage of Ascites.—Perinoff discusses the various methods that have been applied to drain away automatically the ascitic fluid either by direct anastomosis with the portal vein, by diverting the fluid into the subcutaneous cellular tissue or by Ruotte's technic which sutures the saphena vein to the peritoneum. This latter technic has been applied to date in thirteen cases, mostly in Russia, with six successes. In cirrhosis of the liver with atrophy, the ascitic fluid induces phenomena suggesting anaphylaxis. Mauclaire's six patients all grew very weak and died almost at once after the ascites had been drained into the cellular tissue, with the exception of one in whom the ascites was of tuberculous origin. On the other hand, the outcome in cases of cirrhosis of syphilitic or alcoholic origin has been favorable. Perinoff has applied autodrainage in three cases with good results, the ascites accompanying cirrhosis of the liver of the type with simple venous hypertrophy, with no history of alcoholism. He used a silver tube, shaped like the tip of a catheter at one end, the other end slit and the two halves bent at right angles and placed to rest on the fascia after the tube had been introduced into the peritoneum.

This operation and drainage were subsidiary to omentopexy, which he regards as the important part of the operation. As it takes time, however, for collateral circulation to develop after omentopexy—the Talma operation—the tube drainage is provided as a temporary expedient. When the omentopexy has produced the desired conditions, then the tube drain can be taken out. The circumference of the abdomen in the two cases reported in detail subsided from 106 cm. to 96 and 86; the patients were young men of 23 and 17.

50. Operative Treatment of Gastric Crises of Tabes.—Mauclaire reviews the twelve different operative methods that have been applied in treatment of gastric crises, and reports his own experience in one case with Franke's technic, the tearing out of the intercostal nerves. He summarizes seventeen other cases from the literature, stating that the gastric crises were cured by the operation in seven cases; they recurred in eight cases sooner or later. In his own case the cure has been complete during the fifteen months to date. The patient was a woman of 64 who had had tabetic gastric crises during fifteen years. The fifth, sixth, seventh, eighth and ninth intercostal nerves were taken up in turn on a grooved sound and wound slowly on the sound until they tore; the peripheral stump was then cut. The fulgurating pains in arms and legs which the patient had had before the operation were not modified, but the gastric crises were abolished and she is now able to eat and digest approximately normally.

Archives des Maladies du Cœur, etc., Paris

November, VI, No. 11, pp. 689-752

51 *Action of Digitalis on Alternating Rhythm. D. Danielopolu.
52 Frequency, Origin and Significance of the Phenomena of Extra Systoles in the Course of Heart Disease. V. Netedoff.

51. Action of Digitalis on Pulsus Alternans.—Danielopolu concludes from his study of four cases that digitalis has both a retarding action on the myocardium and a retarding action on the length of the refractory period. According as one or the other of these elements predominates, the effect on the pulsus alternans is quite the reverse of that with the other. The retarding action seems to predominate generally, and consequently digitalis should at least be given a trial in these cases. The alternating rhythm and the phenomena indicating asystoly disappeared in his four cases while the heart was under the influence of the drug, but then returned in all but one case, in which the benefit was permanent.

Bulletin de l'Académie de Médecine, Paris

November 25, LXXVII, No. 37, pp. 445-489

53 Colloidal Sulphur in Therapeutics. (La nutrition sulfurée dans la thérapeutique.) A. Robin.
54 Nature of Exophthalmic Goiter. (Maladie de Basedow.) A. Souques.
55 Signs and Symptoms of Pressure on the Brain. (Les variétés cliniques du syndrome d'hypertension intracranienne.) H. Claude.

Journal de Médecine de Bordeaux

November 30, LXXXIV, No. 48, pp. 767-788

56 Nerve-Splicing. (De la réunion bout à bout de nerfs différents et des anastomoses nerveuses.) A. Pitres.
57 Congenital Multiple Ankylosis of Joints. (Les raideurs articulaires congénitales multiples.) H. L. Rocher.
58 Reeducating Atrophied Limb to Walk. (Paralysie persistante de la jambe et du pied traitée par un procédé ingénieux de paysan.) Chambon.

December 7, No. 49, pp. 791-804

59 Spontaneous Fracture of the Lower End of the Femur in the Course of Bloodless Treatment of Congenital Dislocation of the Hip-Joint; Seven Cases. Codet-Boisse.
60 Ergometer for Physiotherapy. (La posologie en physiothérapie; ergomètre donnant la puissance, les deux facteurs du travail mécanique et le nombre total de kilogrammètres produits par un sujet dans une séance d'ergothérapie active.) J. Bergonié.

Journal d'Urologie, Paris

November, IV, No. 5, pp. 733-892

61 *Non-Toxic Antigonococcus Vaccine. C. Nicolle and L. Blaizot.
62 *The Blood-Kidney Index in Kidney Disease. (Signification de l'index hémo-rénal.) R. Bromberg.
63 Injury of Bladder from Impalement. (Blessures de la vessie par empalement.) M. Gerard. Commenced in No. 4.
64 Diagnosis of Stone in Ureter. F. Weisz.
65 Technic for Resection of Diverticulum in the Bladder. G. Marion.
66 Treatment of Certain Bladder Tumors. M. Heitz-Boyer.
67 Pliant Rubber-Whalebone Catheter for the Ureter. (De l'emploi de la bougie tortillée dans le cathétérisme de l'uretère.) P. Nougès.

61. See the Paris Letter in THE JOURNAL, Nov. 15, p. 1825.

62. The Blood-Kidney Index in Kidney Disease.—Bromberg expatiates on the importance of the information to be derived

V. 6
1914

from determination of the proportion of chlorids in the blood and in the urine. He states that in health the concentration in the blood is exactly one-half of the concentration in the urine, and this ratio of 1 to 2 is what he calls the hemo-renal index. He insists that the proportion in the urine or in the blood, taken separately, has not the least diagnostic significance, but comparison of the content in urine and the blood throws light on the functioning of the kidney. Determination of this index is the most practicable and simplest method of ascertaining the functional capacity of the kidneys. When the kidney is below par the elimination of chlorids is the first function to suffer: the nitrogenous substances never are retained while the inorganic salts continue to pass normally into the urine. A change in the hemo-renal index is the first sign of disturbance in the functioning of the kidney. It points to some disturbance long before any other clinical or laboratory sign or tests show anything wrong. As soon as the hemo-renal index becomes less than 1 to 2, some serious kidney disturbance in kidney functioning must be suspected, but the index will persist normal if one of the kidneys is sound. If the index drops below 1 to 1.5, no operation should be attempted on either kidney. If it is still lower than this, the prognosis is extremely grave. The chlorid content of the blood and of the urine is readily determined by comparing their electric conductivity, and Bromberg has devised a small electric apparatus which shows the resistance to the electric current of each of the fluids in turn. The current passes through the fluid by ionizing the atoms of the electrolytic salts; the stronger the concentration, the greater the conductibility. He gives an illustrated description of his simple little apparatus, saying that it requires only a few drops of either fluid; the findings can be read at once, and no previous experience or skill is required.

Presse Médicale, Paris

November 22, XXI, No. 95, pp. 949-960

68 *Coxa Vara in Adolescents. A. Broca.
69 *Jet of Superheated Air in Treatment of Suppurating Wounds. (Traitement des plaies suppurantes par la douche d'air chaude.) H. Roziès.

November 26, No. 96, pp. 961-968

70 Cancer Protozoa and Their Cultivation. F. J. Bosc.

November 29, No. 97, pp. 969-986

71 Operative Treatment of Acute Mastoiditis. (Trépanation mastoidienne.) G. Mahu.

December 3, No. 98, pp. 981-988

72 Apparatus for Excentric Extension of Stumps after Fracture of Leg. (Appareil pour le traitement des fractures de la jambe par enclouchage et propulsion excentrique des fragments: Méthode de Lambret.) E. Quénu and P. Mathieu.

68. **Coxa Vara of Adolescents.**—Broca gives an illustrated description of coxa vara, its aspect and physical signs and the anatomic mechanism. The development of the deformity can be explained most plausibly by assuming some chronic pathologic process, and this was evident in a typical case reported. It commenced two years ago with slight pain in both hip joints occasionally, most marked on the left side. Little by little the lad had to give up bicycling and other sports as his hip joints tired easily and hurt him. He noticed that it was harder for him to stoop over and sit down; after eighteen months there was pain in the left knee. Pain in the knee is often merely a symptom of disease in the hip joint. The pains in hip joint and knee are not severe but persisting and aggravated by fatigue; the pain grows less, however, after the joints are warmed up by exercise. Notwithstanding the two years that have elapsed since the first sign of trouble, there is no displacement of the head of the femur, no swelling or suppuration, and the limb is inclined to flexion, abduction and outward rotation, contrary to what is observed with tuberculous coxitis. Roentgenoscopy confirms the assumption that the neck of the femur lies in an abnormally horizontal plane, and if the lad or girl is obliged to do hard work, lift heavy burdens or be on the feet much of the time, the deformity and pains continue to increase. On the other hand, if the patient is kept in bed with extension applied to the thigh, time will be gained for the parts to become stronger so that although once established deformity cannot be undone, yet there is no further progress and practically normal conditions are restored before long.

69. **Hot Air in Treatment of Suppurating Wounds.**—Roziès expatiates on the bactericidal action of hot air and its desiccating influence, aiding in cicatrization. He states that he has been much impressed with its efficacy in the fourteen cases of open sores in which he has applied the method. He uses a small portable air pump turned by a hand crank or a pump worked by a pedal, the air heated by an alcohol lamp. The sore heals over more rapidly and certainly than under other measures, and the scar seems to be less disfiguring, smoother and more flexible. The effect was particularly noticeable in suppurating wounds that had failed to heal under other measures, especially torpid leg ulcers and traumatic or operative superficial lesions. Of course deep bone processes are not influenced to such an extent.

Revue de Chirurgie, Paris

November, XXXIII, No. 11, pp. 681-822

73 *Operative Treatment of Deformity from Ankylosis of the Knee. (Traitement sanglant des ankyloses vicieuses du genou.) P. Brocq. Commenced in No. 9.
74 Hour-Glass Stomach with Torsion. (Estomac bilobulaire avec torsion de la poche musculaire.) M. Bourcart.

73. **Operative Treatment of Crippled Knee.**—Brocq here concludes his long article on the treatment of vicious ankylosis of the knee, reviewing the various methods of treatment and the results obtained with them in various clinics. He reports a number of unpublished cases with illustrations of some of them and emphasizes the necessity for restoring the use of the limb as soon as possible to prevent the development of serious trophic trouble, which is usually progressive and is an imperative reason for early interference. When the angle of flexion is below 90 degrees, orthopedic resection is generally required. He says that there is no case on record above criticism which enables the assurance that a useful new joint can be made by the method of total grafts of a joint or even by interposition. The interval since has been too short for a conclusive judgment, but the results to date are encouraging to hope that certain adult patients may benefit by the attempt. Such operations are absolutely contraindicated in children on account of the inevitable injury of the cartilage. If any choice is legitimate as yet, Payr's method, interposing pedunculated flaps of fascia, seems the most promising. Brocq has applied this method in twelve cases. With operations hoping to restore the use of the joints, plastic operations on the muscles or tendons are generally necessary in addition. He advocates the use of an apparatus to measure and compare the knees and determine the degree of deformity and plan the method of procedure.

Revue de Médecine, Paris

November, XXXIII, No. 11, pp. 833-920

75 Closed Tuberculosis of the Kidney with Typical Symptoms of Bright's Disease. (La tuberculose rénale fermée à forme de mal de Bright.) J. Bret and Blanc-Perducet.
76 Causes of Osteomalacia. (Le syndrome ostéomalacique.) S. Bonnamour and A. Badolle. To be continued.
77 Case of Bilateral Tuberculous Pneumothorax. F. F. Martinez.

Revue Pratique d'Obstétrique et de Gynécologie, Paris

November, XXI, No. 11, pp. 321-348

78 Dermoid Cysts of the Vesico-Uterine Pouch. Vautrin.
79 Desiccated Milk in Infant-Feeding. L. Pouliot.
80 Radiography of Fetus in the Uterus. Potocki, Delherm and Laquerrière.

Semaine Médicale, Paris

December 3, XXXIII, No. 49, pp. 577-588

81 *Pyelitis in Children. L. Cheinisse.

December 10, No. 50, pp. 589-600

82 Improved Physiologic Solutions. (Nouvelles solutions physiologiques.) B. Schiassi.

81. **Pyelitis in Children.**—Cheinisse deplores the frequent neglect to examine the urine when infants and children develop fever of obscure origin. Few realize the frequency of suppuration in the urinary apparatus in young children; even cystitis is liable to be overlooked, to say nothing of pyelitis. In malarial countries where everything is ascribed to the malarial germ, colon bacillus cystitis or pyelitis is often treated with quinin alone; under it the general health grows progressively worse and no benefit from the drug in any way is apparent. Examination of the urine in such cases reveals

pus and colon bacilli. The part played by kidney calculi in adults in the causation of pyelonephritis is taken by acute infectious diseases or gastro-intestinal infectious processes in young children, especially as the kidneys in young children are particularly vulnerable to injury of all kinds. The infants with pyelitis develop high fever and are extremely restless; children inclined to spasmophilia are liable to have convulsions, misleading the diagnostician to assume meningitis. Anorexia, vomiting, diarrhea and mucous stools, rapid breathing, and a yellowish, even jaundiced tint and distressed expression show that the child is very sick. There may be one or more chills; otherwise chills are rare in infants, even in malaria. The child grows rapidly thin, the high continuous fever at first becomes remittent or intermittent, and typhoid may be erroneously diagnosed. In older children the clinical picture may not be so severe, pallor, anorexia and periods of pyrexia alternating with non-febrile periods. Bosanquet has reported the case of a boy of over 2 who had periods of pyrexia regularly every four or five days; in a girl of 6 the periods of pyrexia came on about the tenth or fifteenth day and in the intervals she seemed in normal health.

There are no local signs in the majority of cases, especially in infants. Left untreated, the pyelitis is liable to become chronic while as a rule it is amenable to proper treatment. As the cause of the pyelitis is probably some obstruction to the flow of urine in the kidney pelvis, and as this in young children can usually be remedied by forcing the urine, the aim in treatment should be to induce copious secretion of urine to flush out the kidney pelvis by drinking large quantities of fluids. All agree as to the importance of this, but opinions differ as to the wisdom of giving drugs to sterilize the urine. Lenhartz denounces them at any age, saying that the best treatment is to have the patient drink three or four times a day a pint of hot infusion of linden-flowers which mechanically clears out the urinary apparatus, keeping this up for weeks and even for months. Göppert and Langstein recommend the use of hexamethylenamin and salol alternately. The former gives children from 2 to 9 months old, 0.05 gm. of salol five to eight times a day, and children up to 2 years, 0.2 gm. five or eight times a day. Langstein gives, even to infants, from 0.1 to 0.3 gm. four times a day and 0.5 for older children. Still advocates potassium or sodium citrate enough to keep the urine alkaline day and night for a week or ten days at least.

Beiträge zur klinischen Chirurgie, Tübingen

October, LXXXVII, No. 2, pp. 317-538

83 Surgery for Mesenteric Vessels and Intestinal Infarcts. A. Reich.
84 Resection of Larynx and Esophagus for Cancer of the Hypopharynx with Survival for a Year. A. Hoffmann.
85 Operation for Undescended Testicle. (Operative Behandlung des Leistenhodens.) K. Hanusa.
86 Fatal Necrosis of Jaw from Ulcerative Stomatitis in Man with Latent Gastric Cancer. K. Hanusa.
87 Large Calculus in Kidney. (Riesennierenstein nebst Bemerkungen zur Frage des Einflusses der Nierenarterien auf die Steinbildung.) A. Grave.
88 Fracture of Lower Tibia and Fibula. H. Hilgenreiner.
89 *Functional Disturbances in Neighboring Organs after Operations for Goiter. (Ueber die nach Kropfoperationen auftretenden Funktionsstörungen der Nachbarorgane.) R. Pamperl.
90 Varnish for Dressing Wounds. (Bakteriologische Untersuchungen über Mastixlösungen.) M. Borchardt.
91 *Incarceration of Undescended Testicle. (Zur Kenntnis der Hodeneinklemmung.) M. Flesch.
92 Experiences with Mesothorium Treatment of Cancer. W. Lobenhoffer.
93 *Vascular Disturbances in Diseased Appendix. (Zur Frage der Colica appendicularis.) E. v. Redwitz.

89. **Functional Disturbances in Neighboring Organs after Operation for Goiter.**—Pamperl gives a detailed study of the anatomy of the region and reviews the experiences since 1900 with 182 patients who were operated on for goiter; the list includes only three with exophthalmic goiter. Severe postoperative disturbances in swallowing are extremely rare. They are connected with paralysis of the recurrent nerve, and when this occurs the patient must be fed exclusively through a tube and with the foot of the bed raised to keep the throat region low so that no fluids or solids will get into the air passages. Collaterals develop rapidly and by the end of a week the patient is able to swallow approximately normally. Of the nine patients with postoperative unilateral recurrent paralysis, one has been lost track of, one has completely recovered, two are still in the same condition and in two the condition has grown worse, but speech is not impaired in one; in the other the paralyzed vocal cord has atrophied. Postoperative laryngeal trouble occurred in thirty-two instances, that is, in 17.58 per cent. of the total material, but in all but the above nine the edema, hemorrhage or paresis proved briefly transient.

91. **Incarceration of Undescended Testicle.**—The patient was a man of 24 and the testicle was functionally destroyed by the seven hours of interference with its circulation. The shock and collapse were extreme as usual in these cases from the intense pain.

93. **Vascular Changes in the Appendix.**—Von Redwitz gives four colored plates to illustrate his long article describing the conditions found in the vessels in an inflamed appendix. Periodical colic-like pain with appendicitis is probably the result of changes in the arteries, causing pain like that of intermittent claudication and from the same mechanism. The pain ascribed to a movable colon may be due to the same cause. He summarizes 132 cases and gives several pages of bibliography.

Berliner klinische Wochenschrift

November 24, L, No. 47, pp. 2171-2216

94 Cerebellum Tumor Successfully Removed. (Ungewöhnliche Kleinhirngeschwulst, durch Operation geheilt.) F. Krause.
95 Transplantation of Vessel in Treatment of Aneurysm. (Zur Operation des Aneurysma mit Gefässtransplantation.) E. Unger.
96 *Extravasation of Blood in Joints. (Ueber Blutergelenke.) O. Mankiewicz.
97 *Research on Gastric Secretion. (Unsere Methoden zur Untersuchung der Saftsekretion des Magens und Ersatz derselben durch Sekretionskurven.) M. Skaller.
98 *Splenectomy for Pernicious Anemia. (Einfluss der Milzexstirpation bei perniciöser Anämie.) O. R. C. Huber.
99 Abderhalden's Serodiagnosis in Psychiatry. M. Theobald.
100 Abderhalden's Serodiagnosis of Pregnancy. (Praktische Erfahrungen mit der biologischen Schwangerschaftsreaktion nach Abderhalden—Dialysierverfahren.) A. Scherer.
101 The Skin Reaction in Syphilis. (Zur Cutireaktion bei Lues und ihre Beziehung zur Wassermann'schen Reaktion.) R. O. Stein.
102 Mechanism of Action of Mercury in Spirilloses. (Zur Erklärung der Wirkungsweise des Quecksilbers bei den Spirillosen.) B. Hahn and Kostenbader.
103 Gauge for Radiotherapy. (Eine Absorptions- bzw. Dosierungstafel für Radium- und Mesothoriumbestrahlung.) Weckowski.
104 Treatment of Asthma by Vibration and Inhalation. O. P. Gerber.
105 Alimentary Deposits of Fat in the Heart Muscle. (Alimentäre Herzmuskelverfettung.) C. Wegelin. Commenced in No. 46.

96. **Blood in Joints.**—Mankiewicz refers to the extravasation of blood in the joints of hemophiliacs, and discusses the three stages of the trouble, the accumulation of blood, the consequent irritation of the joint and the resulting crippling of the joint. He gives roentgenograms of the knee in some cases with a history of hemophilia; the knees show traces of the panarthritis, the joints having become inflamed from the presence of the blood. The changes seem to be quite characteristic, and roentgenoscopy may thus disclose an unsuspected tendency to hemophilia in patients with joint trouble. The joint in this second stage is swollen and feels hot, while the *x*-ray shows the bones atrophied and deficient in lime. The surfaces of the bones and cartilage are rough and there are small patches of darker shadow at the capsule with rarefication of the condyle tissue, especially the internal. The epiphysis line is remarkably distinct for adult males but it is jagged; the quadriceps is atrophied. The roentgen findings resemble those with chronic deforming arthritis; the permeability of the bones for the rays show the lack of the normal proportion of lime. This transparency of the bones may be pronounced even in the shoulders and feet.

97. **Test for Gastric Secretion.**—Skaller's method aims to supplement the findings with the test breakfast, recording conditions as to the course of the secreting functions, showing progress under treatment. The patient swallows a duodenal tube with several openings. It is kept from passing through into the duodenum by having the tube too short to pass the pylorus. Patients soon learn to swallow this narrow tube—the lumen is not over 2 mm.—and it causes no discomfort nor

V. 6
1914

tendency to vomit even when left for hours. The patient swallows the tube, fasting, and then takes 200 gm. of Liebig's meat extract, at room temperature. Every five minutes 3 or 15 c.c. of stomach content is aspirated through the tube and the acidity titrated. To ensure mixing of the stomach contents, air is forced in through the tube each time before siphoning out the contents. The proportion of acid found is recorded on a chart, and an objective oversight is thus obtained of conditions in regard to gastric secretion. Some of the curves given show the fluctuating course of the acidity, so that the findings at different times within the hour are thus seen to vary within a wide range.

98. **Splenectomy for Pernicious Anemia.**—The remarkable improvement that followed splenectomy in the case reported suggests that the spleen must be a much more important factor in pernicious anemia than hitherto suspected. It seems to acquire a very destructive action on the red blood corpuscles while at the same time exerting an influence on the bone-marrow, checking the production of new red corpuscles. This pathologic disturbance in the functioning of the spleen is evidently the result of the myeloid changes in the spleen which have hitherto been comparatively disregarded. Removal of the spleen therefore does not remove the cause of the disease, but it does away with the source of several of the most serious elements in the disease. The bone-marrow may recuperate completely in mild cases when this disturbing element drops out, and even if it is unable to do this, the general condition improves when the red corpuscles which are produced cease to be destroyed in such wholesale numbers when the spleen is gone. His patient was a woman of 34 with a history of well treated syphilis four years before. The pernicious anemia was in a threatening stage, hemoglobin 15 per cent, and only slight benefit was realized from repeated intragluteal injection of 20 or 25 c.c. of defibrinated blood. The splenectomy took only twenty minutes; in future he will ligate the different arteries preliminary to removing the spleen as this would save a lot of blood. Fully 150 c.c. of blood flowed from the spleen after its removal. The patient felt better by evening and the improvement was pronounced the next day and later. By the fifth week the hemoglobin was 50 per cent. and the reds numbered two and a half millions. There was no further edema, jaundice or urobilinuria. The seventh week the progress toward recovery seemed to stop and the hemoglobin dropped to 42 but increased to 43 under repeated injections of blood. The patient is now taking fresh beef spleen. She is up and about and cheerful to date, in marked contrast to her desperate condition before the splenectomy.

Correspondenz-Blatt für Schweizer Aerzte, Basel

November 29, XLIII, No. 48, pp. 1569-1600

106 Nature of Action of Specific Drugs. (Wesen der spezifischen Arzneimittelwirkungen.) M. Cloetta.

107 Diabetic Foods on the Market. (Ueber Diabetikergebäcke des Handels.) F. Näf.

108 Medical Insurance in Germany. (Am Vorabend des Kampfes des deutschen Aerztestandes mit den Krankenkassen.) Häberlin.

Deutsche medizinische Wochenschrift, Berlin

November 27, XLVIII, No. 48, pp. 2329-2384

109 *Treatment of Syncope, Shock and Collapse. (Behandlung akut bedrohlicher Erkrankungen. II.) Grober.

110 Development of the Mind. (Entwicklung der psychischen Tätigkeit.) W. v. Bechterew. Commenced in No. 47.

111 Clinical Study of Disturbances in the Intermediate Metabolism. (Alkaptonurie mit Ochronose und Osteo-Arthritis deformans; Zystinurie.) Umber and M. Burger.

112 *Protecting Influence of Protein Diet against Tuberculosis. (Ernährung bei Tuberkulose im Tierexperiment.) O. Hirnemann and E. Thomas.

113 *Detaching the Lung in Treatment of Tuberculous Cavity. (Behandlung der kavernösen Phthise durch extra- und intrapleurale Pneumolyse.) A. Mayer.

114 Polyps in the Stomach. (Ueber Magenpolypen.) G. Ledderhose.

115 Roentgen Therapy of Bubo. W. Wittig.

116 Foreign Bodies in the Esophagus. (Oesophagoskop oder Münzenfänger.) A. T. Jurasz.

117 Causes of Neutralizing Action of Alcohol in Respect to Solutions of Phenol. L. Berceller.

109. **Treatment of Faint, Shock and Collapse.**—Grober says that the first thing is to feel of the pulse. If the symptoms suggest lack of blood in the head, the foot of the bed should be raised or the lower part of the body can be lifted. The easiest way to arouse the patient from his lethargy in case of severe syncope is with a towel wet with cold water with which the skin is slapped at various points, thighs, chest, back and arms, avoiding carefully the abdomen. At the same time the legs and the soles are rubbed vigorously with a dry cloth or hard brush. As the face loses its livid aspect, the lids and lips move; the first complaint is generally of the cold, and the skin still feels cold with a clammy sweat. Then the patient is warmly covered, hot bottles are placed in the bed, and he is given hot drinks, brandy and water, hot bouillon or meat extract. As he recovers, the room is kept quiet and darkened, with someone to watch over the pulse and respiration, keep the patient horizontal, and keep out the anxious family. A moderately severe syncope of this kind is liable to be brought on by the vitiation of the air in crowds and by fright and horror. The anemic and those with heart and lung disease succumb more readily, and the condition is more refractory to treatment. The physician must act promptly and vigorously in such cases; long hesitation may be disastrous. The severer forms may prove directly fatal. Grober emphasizes the danger in such cases from constriction by clothing, tight collar or belt. Sometimes a knife, with the edge turned away from the patient, cutting the tight bands or garters, may work wonders. Stimulation of the mucosa with vinegar, ammonia or the like, or mechanical stimulation of the nasal mucosa with a feather or spear of grass may prove useful, especially if the feather is scorched to add the pungent odor. An additional measure is to bandage the limbs from the periphery upward to induce autotransfusion. The pulse often grows very much better. Stimulating enemas were formerly much used and may prove of some assistance, 30 or 75 c.c. of brandy in two or three times this amount of hot water. Some of the above measures should be applied with energy but not too long, and if the pallor, small pulse and shallow breathing keep up, stimulants for the heart are necessary. He has seldom witnessed any benefit from epinephrin in shock and collapse, and thinks it is more rational to give digitalis instead.

Respiration can be promoted by pressing on the costal arch region to pump more air out and in, or maneuvers for artificial respiration may be systematically applied. A few minutes may restore the respiration to normal conditions but sometimes it must be kept up for hours, with an assistant for each arm, changing places every seven minutes to pump the other arm. The tempo should not be more than 15 or 20 to the minute. Slapping the heart region with the flat hand, about seventy times a minute, is preferable to rougher manipulations; in the very lean the heart may be directly grasped upward through the diaphragm if the abdominal wall is much relaxed, but it must not be forgotten that the left lobe of the liver is acted on at the same time. In the agitation of shock, notwithstanding the weakness of the pulse and respiration, sedatives may be needed along with the stimulants for the heart. The aspiration of vomit must be prevented by keeping the head turned to the side, and wiping out the mouth and throat with the finger wrapped in gauze or with a gauze sponge. The patient must never be allowed to sit up in the first few hours after a severe syncope; the headache and insomnia are best combated by lowering the head. The dangers of collapse and shock must not be aggravated by any further loss of blood, consequently no operation should be done until the centers in the medulla oblongata have resumed their functioning. Patients who have severe syncope, shock or collapse should be kept under supervision for some time afterward to protect them against relapses and further injury of organs.

112. **Protecting Influence of Protein Diet Against Tuberculosis.**—The experimental research reported showed that young pigs fed systematically with casein were much more resistant to inoculation of tubercle bacilli than others of the same litter fed with carbohydrates or fats.

113. **Decortication of the Lung in Treatment of Tuberculous Cavity.**—Mayer says that when conditions prevent injection of a gas to effectually compress the lung, about equally

good results may be obtained by loosening the lung from outside and inside the pleura, directly over the cavity. The lung may collapse immediately when the pleura is detached, and stay collapsed.

Medizinische Klinik, Berlin

November 30, IX, No. 48, pp. 1965-2006 and Supplement

118 Influence of Sex, Heredity and Age on Heart Disease. (Vortragszyklus über Herzkrankheiten. IV.) M. Herz.
119 Still's Disease: Two Cases. J. Piske.
120 The Diet in Severe Diabetes. M. Labbé.
121 Human Serotherapy in Scarlet Fever. (Behandlung des Scharlachs mit Rekonvaleszentenserum und Normalserum.) C. Rowe.
122 Extragenital Syphilis. (Zur Syphilis insontium.) R. v. Pfanner.
123 Southern Climate for the Tuberculous. F. Koch.
124 Symposium on the Diagnostic Importance of the Subcutaneous Tuberculin Reaction. A. v. Strümpell and Others.
125 Pyemia and Sepsis. E. Urbantschitsch.
126 Treatment of Skin Diseases by the General Practitioner. (Dermatotherapeutische Winke für den Praktiker. II.) J. Schäffer.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXVII, No. 1, pp. 1-198. Last indexed November 15, p. 1852

127 *Tetanus. (Experimentelle und klinische Untersuchungen über die Pathogenese und Therapie des Starrkrampfes.) C. Permin.
128 *Bases and Worth of Vaccine Therapy. G. Wolfsohn.
129 Gastric Ulcer Perforating into the Spleen. (In die Milz penetrierendes Ulcus der grossen Kurvatur des Magens.) H. Finsterer and K. Glaessner.
130 Plastic Operation for Cardiospasm. (Extramuköse Cardioplastik beim chronischen Cardiospasmus mit Dilatation des Oesophagus.) E. Heller.
131 *Ulcerative Colitis. A. Schmidt.
132 Duodenal Ulcer. W. Dünkeloh.
133 *Local Retention of Iodin in Region Shut Off from General Circulation. (Lokale Jodretention durch Stauungshyperämie.) A. Salomon.

127. **Tetanus.**—Permin's account of his experimental and clinical research on tetanus fills seventy-one pages. It includes also a survey of the results of treatment of tetanus in various lands, especially in Denmark, before and after the production of tetanus antitoxin. In the 388 cases reported in Denmark, 72.8 per cent. of the antitoxin-treated patients died when the incubation period had been less than ten days, and 94.7 per cent. of the ninety-four patients to whom serotherapy had not been applied. The proportion of total recoveries has risen since serotherapy came in from 21.1 to 42.3 per cent. of 199 and 189 cases, respectively. But he insists that great improvement is still possible with perfected technic based on the knowledge that the antitoxin cannot act on the toxin already anchored in the cells. It neutralizes only the toxin still circulating in the blood and the fresh toxin as it is poured into the blood. The most promising method is to proceed the moment the tetanus is diagnosed to draw 16 or 33 c.c. of cerebrospinal fluid by lumbar puncture and inject 100 or 200 antitoxin units. With extreme opisthotonos slight general anesthesia may be required. The foot of the bed should be raised to send the serum up the spinal canal. If lumbar puncture is impracticable, he makes an intramuscular injection of the same amount. Then the wound is examined and foreign particles removed, the opening enlarged, and the cavity rinsed with some antiseptic and tamponed with silver nitrate gauze, providing for ample drainage. The intraspinal or intramuscular injection is repeated each day for five or six days and then every third day until marked improvement is observed.

The serotherapy by no means does away with the necessity for chloral or morphin. The dosage must be proportional to the age of the patient and the severity of the tetanus. Some clinicians give very large doses of chloral, but Permin thinks it is wiser to keep below the maximum dose and supplement the chloral with morphin, keeping the patient in a quiet, darkened room. It is of the utmost importance that the patient should get adequate nourishment as the resisting powers depend to such an extent on this. Fluid foods are best and with extreme lockjaw it may be necessary to pull a couple of teeth to permit the introduction of a rubber tube through which fluid nourishment can be poured into the mouth. If there is spasmodic contraction of the muscles of swallowing, a dose of chloral half an hour beforehand will help to relax the spasm. If the paroxysms recur with threatening frequency or severity, all should be in readiness to give a few whiffs of ether or chloroform. Intraspinal injection is urgently required in all cases of local tetanus; it acts here the same as if injected into the nerve while the technic is much simpler and easier.

128. **Vaccine Therapy.**—Wolfsohn discusses the various affections in which vaccine therapy seems promising and reviews the results realized to date. He has seven years' experience of the method. All clinicians seem to agree that properly applied vaccine therapy is harmless. Any aggravation of the condition that may occur later probably would have occurred the same without the vaccine therapy. The danger of anaphylaxis seems to be negligibly slight; at least, to date nothing has been known of a threatening character in this line. Even the greatest skeptics must be convinced of the beneficial results in certain affections. Still better results may be anticipated when the vaccine therapy is supplemented by other therapeutic methods, especially chemotherapy, and when the desired clinical reaction is realized with the least dangers by utilizing vaccines made with the least possible injury of the antigen elements. He has applied vaccine therapy to thirty-four acne patients, and nine were not influenced in the least; nine were temporarily improved, and sixteen were completely cured of their long rebellious acne. No benefit was apparent in his twelve cases of postoperative osteomyelitis fistula, nor in six of mastitis, but his success in six cases of furunculosis in infants justifies further trials with small doses. Vaccine therapy to date has been applied in about 2,000 cases of furunculosis in adults, but the published records do not state whether the trouble was old and chronic in all the cases, while this alone calls for vaccine therapy. In his thirty-two cases the furunculosis had lasted from two to twenty years, and twelve of the patients were completely and twelve others partly cured. In eight others no influence from persevering vaccine therapy was apparent. The cure has persisted from one to three years to date. A polyvalent vaccine often proved effectual but autogenous vaccines were more reliable.

In only three of his fourteen cases of chronic eczema was a cure realized, and nine were entirely uninfluenced. His success surpassed all expectations in six cases of obstinate sinusitis in the accessory cavities of the nose. General streptococcus infection is less promising for vaccine therapy, and the treatment failed completely in his eight cases of erysipelas of the face and in four at other points, but in two cases of erysipelas of the arm distinct benefit was apparent. Acute streptococcus affections contra-indicate vaccine therapy, but it may help in the subacute and chronic cases, especially with scarlatinal complications and migrating erysipelas. Vaccine therapy is especially effectual in gonorrheal arthritis, most so when associated with means to induce stasis hyperemia. Good results from vaccine therapy have also been reported with epididymitis and, less constantly, with pyosalpinx. Failures have been reported in all forms of gonorrheal catarrhal mucous membrane affections, such as urethritis, endometritis and conjunctivitis. Great caution is necessary with general gonorrhea, especially when there is endocarditis. Stock vaccines are of no use with colon bacilli, and vaccine therapy in general is of use only in the chronic forms and in these only, as a rule, when the urinary apparatus is involved and only when there is a pronounced reaction. In chronic colon bacillus cystitis and pyelitis a vaccine in combination with other measures may hasten the cure but the urine is not freed from the bacilli in every instance. Vaccine therapy is promising also in certain diseases among cattle, such as contagious vaginal catarrh, and in strangles in horses.

131. **Ulcerative Colitis.**—Schmidt states that fifteen of his thirty patients with severe ulcerative colitis were treated with internal measures alone, and eight were cured and one improved. Among the fifteen operative cases he records only two cures and seven improvements. He tabulates thirty cases from the literature to compare with them, and comments on the severe complications liable with the colitis, thrombosis, polyarthritis, exophthalmic goiter, pneumonia, multiple neuritis and embolism in ten of the cases, all evidently of septic

V. 6
1914

origin. No permanent cure was ever realized from medicines by the mouth although calomel and ipecac have helped. Better results were attained with drugs by the rectum, given with acacia in weak concentration to refrain from irritating, supplemented by external heat and other symptomatic measures.

133. **Local Retention of Iodin in Segregated Region.**—Salomon refers to Bier's method of enhancing the therapeutic action of stasis hyperemia in surgical tuberculosis by giving at the same time potassium iodid internally. Salomon investigated conditions afterward in twelve persons and in rabbits given similar treatment; the data all confirm the remarkable retention of the iodid in the edema fluid and tissues in the segregated limb. The retained iodin is not eliminated when the constricting band is removed but remains stored up in the tissues for a time. The practical importance is obvious of this retention of therapeutic substances under the influence of stasis hyperemia. Others have reported similar storing up of salicylic acid under the same conditions. We are able thus to supply the healing drug almost directly to the diseased tissues and in the strongest concentration possible. We can inject a drug directly into the focus and hold it there by this means without fear of general toxic action. In one of the eight cases reported a chronic rheumatic affection of the hand became very much swollen and worse under the iodid and constriction of the shoulder. After subsidence of these phenomena, however, the condition was found materially modified for the better.

Münchener medizinische Wochenschrift

November 25, LX, No. 47, pp. 2601-2656

134 *Iron and Magnet in Prophylaxis and Treatment of Peritoneal Adhesions. (Eisenfüllung des Magendarmkanals und Elektromagnet.) E. Payr.
135 The Tender Points in the Spine with Ulcer at Different Points in the Stomach. (Zur Diagnostik der Lokalisation des Magengeschwüres.) T. v. Openchowski.
136 Is a Diathesis a Constitutional Anomaly? H. Pässler.
137 Diphtheria Toxin Skin Reaction. (Die Diphtherietoxin-Hautreaktion des Menschen als Vorprobe der prophylaktischen Diphtherieheilserum-injektion.) R. Schick.
138 *Roentgen Treatment of Tuberculous Lymph-Nodes in the Neck. Fritsch.
139 *Serotherapy in Scarlet Fever. (Scharlachrekonvaleszentenserum.) R. Koch.
140 *Dietetics on Basis of Recent Discoveries in Regard to Beriberi, etc. (Diät und diätetische Behandlung vom Standpunkt der Vitaminlehre.) C. Funk.
141 Leukocyte Count. (Die Differentialauszählung der weissen Blutkörperchen in der Zählkammer.) H. Dunzelt.
142 *Spring Splint as Aid in Treatment of Tabetic Ataxia. (Mechanische Behandlung der tabischen Ataxie.) H. v. Baeyer.
143 Hot Air in Treatment of Severe Burns. (Behandlung einer ausgedehnten schweren Verbrennung mit dem Warmluftstrom.) K. Frankhauser.
144 *Systematic Addition of an Emetic to Narcotic Drugs as Safeguard against Suicides and Mistakes. (Schutz vor Schlafmittelvergiftungen.) W. Cimbal.
145 From the Balkan War. (Aus den griechischen Kriegslazaretten zu Saloniki und Athen am Ausgang des zweiten Balkankrieges.) Friedrich. Commenced in No. 46.
146 The Physician Cannot Treat His Own Family. (Die Hohe Schule für Aerzte und Kranke. XIII.) M. Nassauer.

134. **Magnet in Prophylaxis and Treatment of Peritoneal Adhesions.**—To fill the gastro-intestinal tract with a suspension of reduced iron or other form of iron and then move parts of the tract around at will by applying a very large magnet to the abdominal wall, is Payr's ingenious idea. He gives a number of illustrations to show the way in which the iron-filled intestine rises up in a peak in response to the attraction of the magnet, or several loops of intestine crowd together at the point nearest the magnet. The movements of the loops can be seen through the abdominal wall as it bulges above them and they can be inspected still closer with the Roentgen screen. He has been experimenting with various forms of iron for the purpose, and various applications of the method, finding that artificially induced adhesions could be broken up by the force of the magnet. One of his illustrations shows how the fine particles of iron in the bowel under the influence of the magnet arrange themselves in the curved lines familiar in the study of physics as the magnetic lines of force. Payr states that the most scrupulous macroscopic and histologic study of the intestines afterward failed to show the slightest injury from the procedure, not even a trace of capillary hemorrhages in the intestines where they had been drawn up and long held against the abdominal wall. The method was applied also to two thin women, one of whom had symptoms suggesting trouble from adhesions in the region of the sigmoid flexure. The application of the magnet to this point, after an enema of the iron suspension, caused distinct local pain. The magnet applied elsewhere to either women was not felt subjectively in any way. He used a magnet like those made to extract metal particles from the eye, but this is awkward for the purpose, and he is now trying a smaller magnet, with a force of about 75 kgm., mounted on a standard with counterweight, convenient to apply to the erect or reclining patient. He gives a list of ten different indications for which the method seems promising, including the stimulation of peristalsis when there is a tendency to postoperative paresis of the bowel, reduction of torsion and invagination and correction of sagging of the bowel, enteroptosis. By varying the amount of iron, the force of the magnet and its distance, the procedure can be adapted to individual dosage, and the movement can be produced in any desired direction under direct visual control with the Roentgen rays. He fed some of the rabbits and guinea-pigs with 1 or 2 gm. of ferrous oxid daily and their health did not seem to be affected in the least. Others were given the iron in a flour gruel or suspended in agar-agar. In the clinic it might be better to give the iron in a capsule. Both reduced iron and ferrous oxid can apparently be taken with impunity as both are insoluble in weakly alkaline mediums, and nothing to suggest injury was discovered in the experimental research and clinical experiences reported.

138. **Roentgen Treatment of Tuberculous Lymph-Nodes in the Neck.**—Fritsch has applied this treatment in thirty-three cases during the course of a year, the ages of the patients between 7 and 30; eight are entirely cured and eight much improved. Accompanying tuberculous lesions elsewhere reduce the prospects of success. In four cases a hard lump was left which he cut out, and he extols the advantages of thus combining treatments. The roentgenotherapy is liable to prove effectual without leaving a disfiguring scar and without the necessity for operating under general anesthesia. It can be applied also without interfering with the patient's occupation, but a six months' course is generally necessary. He followed Kienböck's technic in every case.

139. **Serotherapy in Scarlet Fever.**—Koch reports an additional series of 28 cases, bringing the total to 40 in which scarlet fever patients were treated with serum from others convalescing from the disease. In all the scarlet fever was of a very severe type. Of the total 263 cases of scarlet fever in the last year, 6.5 per cent. of the children developed nephritis and 1.1 per cent. died. Of the 12 treated with normal human serum 16.7 per cent. developed nephritis and 8.3 per cent. died, while of the 28 treated with serum from convalescents, none developed nephritis and only one already moribund patient died. The effect of this form of serotherapy was most striking in the cases of severe toxic scarlet fever without complications; in fact the serotherapy does not seem to act on complications. The curves from a number of cases are given to illustrate the prompt and beneficial action of serotherapy in this form. The communication issues from the public hospital at Frankfurt a.M.

140. **New Bases for Dietetics.**—Funk refers to the recent discoveries in regard to the importance of certain minute quantities of certain substances in the food the lack of which entails disturbances of which beriberi is an extreme type. (Discussed editorially in THE JOURNAL, 1913, lx, 1543.) These special substances may be destroyed in the cooking, by overheating (milk), by laking out in boiling, by carrying desiccation too far (especially in feed for cattle), and by discarding the outer covering of grains, especially rice, corn, wheat and rye. A loss of appetite and repugnance for food he regards as an early sign that the system is suffering from lack of these special substances or vitamines, as they have been named. The diet should at once be modified to supply variety and sufficient amounts of the vitamines, a digestible, light mixed

diet including fresh fruit, vegetables, potatoes, meat, milk and butter, remembering that fruit and vegetables lose their vitamines by drying; they are also lost if the water in which they are boiled is thrown away. He adds a list of foods rich in vitamines, egg yolk, whole wheat and whole rye bread, moderately roasted meat, fresh vegetables and vegetable soups, fresh yeast, and cod liver oil. The discovery of the vitamines throws light on the superiority of breast milk for infants and on the injurious effect of too long or too high heating of cow's milk. The nursing woman must have a diet rich in vitamines; possibly cooked yeast might serve to promote production of milk in women as it has proved useful in dairies. In any event he thinks it is worth a trial. In conclusion he says that the question of the origin of pellagra is in the same stage now as that of beriberi ten years ago. One thing is certain, he declares, namely, that there is no endemic pellagra outside of corn-consuming districts. The drying of the corn may be responsible for the loss of its vitamines; and he thinks that corn is scarcely suitable for food. At least it should be eaten only with articles particularly rich in vitamines, and the whole grain should be used.

142. **Mechanical Aid in Treatment of Tabes.**—Baeyer gives an illustration of a spring splint which he buckles to the leg and thigh with a metal sole. He has found it of great service in reeducating tabetics to walk. The splint enables the patient to perceive the position of the joints and the state of contraction of the muscles, as it checks mechanically both the active and passive movements of the limb and thus the patient gets much better control over the limb. The benefit was constant and pronounced in all the cases in which he has applied the splint. It can be used where a course of systematic training is impracticable for any reason or as accessory to these exercises.

144. Discussed editorially.

Therapie der Gegenwart, Berlin

December, LIV, No. 12, pp. 529-576

147 *Treatment of Albuminuria and Nephritis. H. Strauss.
148 *Phenomena Suggesting Anaphylaxis Following Injections of Fibrolysin. Bethlehem.
149 *Iodin Fumes Applied to the Throat to Exterminate Diphtheria Bacilli. S. Abel.
150 Changing Tendencies in Surgery. (Wandlungen in der Chirurgie.) M. Katzenstein.
151 *Sudden Death after Local Anesthesia with Alypin in Case of Tuberculous Adrenal Process. (Plötzlicher Tod nach Lokalanästhesie mit Alypin bei einseitiger Nebennierentuberkulose.) A. Proskauer.
152 *Friedmann's Remedy for Tuberculosis. F. Klemperer.

147. **Treatment of Albuminuria and Nephritis.**—Strauss remarks that the progress in this line in the last twenty years has been mainly by determining and enlarging the principles on which the older methods of treatment depended. He regards it as great progress that attention has been diverted more to the constitutional form of albuminuria during, preceding and following puberty. Changes in the distribution of the blood-supply are mainly responsible for this orthostatic albuminuria and lordosis albuminuria. The recently acquired knowledge in this line has brought progress in that more active measures are applied now: change of climate to the mountains or the sea, extra nourishing food and physical measures to render the patient more robust. Especial care must be exercised to refrain from getting chilled. In regard to diet he says that in all his experience he has never encountered but one case in which there seemed to be injury from eggs in nephritis. The preparation of the food, especially the way meat and vegetables are cooked, is very important. He says in conclusion that decapsulation of the kidney can be recommended only in cases of long persisting extreme oliguria accompanied by uremic or suburemic phenomena, especially in acute nephritis; less in the chronic form. He recently witnessed remarkable benefit from decapsulation in a case of scarlet fever. The physician now, he reiterates, cannot be content with the old-fashioned way of treating nephritis, treating all patients on the same basis, with a certain monotony. He must differentiate the special points to be aimed at with his therapeutic measures in each individual case.

148. **Anaphylaxis after Fibrolysin.**—The fibrolysin was injected in treatment of pain in the region suggesting possible peritoneal adhesions, relics of an old gall-stone affection. After the tenth injection an extensive eruption, suggesting measles, suddenly developed. The patient was a woman of 64. The injections were suspended but were resumed three years later on return of the symptoms and vibratory massage was applied to the gall-bladder. After the third injection the patient seemed to be suddenly suffocating for a time, and a fourth injection was followed by a chill and fever with much distress and pain. The pains subsided after twenty-four hours and a week later 2 c.c. of fibrolysin was injected anew, and again suffocation and distress followed. The phenomena observed can be explained only, he thinks, by accepting anaphylaxis. The fibrolysin was kept up, notwithstanding, to complete the course, and the beneficial effect was permanent.

149. **Iodin Sterilization of the Throat after Diphtheria.**—Abel thinks that little is accomplished by the ordinary methods of gargling the throat, etc. The only way to thoroughly sterilize the throat, he says, is in the form of vapor. Nothing else finds its way so infallibly as vapors into all crevices, and he advocates iodin for the purpose, generating nascent iodin by heating iodoform in a flask with two bent glass tubes through the rubber stopper, one tube connected with a rubber bulb, the other with a narrow rubber tube. When the flask fills up with the iodin fumes as the iodoform is heated over an alcohol lamp, he blows the fumes through the nostrils and into the pharynx, repeating this twice a day for three days. He has thus treated eighty-nine patients with diphtheria bacilli lingering in their throats longer than three weeks after recovery from diphtheria. Of the total eighty-nine the bacilli had disappeared in 47 per cent. after a three days' course; 31.5 per cent. required two courses and 20 per cent. three courses. Two patients proved absolutely refractory, no result from the treatment being apparent. Reexamination later in a number of the cases confirmed the thorough eradication of the bacilli.

151. **Fatality after Local Anesthesia.**—Proskauer reports that a man of 47 died suddenly after 20 c.c. of a 2 per cent. solution of alypin had been injected into the bladder. The only thing that could be found to explain this fatality was an extensive tuberculous process in the right adrenal. He theorizes to explain the mechanism of this fatality and cites three cases from the literature in which death followed at once after local anesthesia with cocain or novocain and in both cases necropsy revealed a tumor in the chromaffin substance.

152. Discussed editorially on page 47.

Virchow's Archiv, Berlin

November, CCXIV, No. 2, pp. 161-320

153 "Embryonal Adenosarcoma" in Boy's Kidney. F. Wengraf.
154 The Pancreas. (Zur Pathologie der Bauchspeicheldrüse.) K. Koch.
155 Brain Complications of Whooping-Cough. (Die Gehirnkomplikationen des Keuchhustens mit bes. Berücksichtigung der "Pachymeningitis prodectiva interna.") B. Hada.
156 *Etiology of Duodenal Ulcer. (Akzessorische Nebenpankreas, Duodenaldrüsen-adenom und -adenokarzinom.) G. Scagliosi.
157 *Autodrainage for Ascites. (Experimente zur plastischen Aszitesdrainage, zugleich ein Beitrag zur Histologie implantierter Formolgefässe.) E. Schepelmann.
158 Aneurysm in Hepatic Artery. (Dissecierendes Aneurysma mit Ausscllung durch totale Thrombose mit sekundärer Verkalkung und Verknöcherung des Thrombus.) H. Merkel.
159 Developmental Valvular Defect. (Besondere Form von Entwicklungsstörungen der Trikuspidalklappe.) A. Heigel.

156. **Etiology of Duodenal Ulcer.**—Scagliosi discusses the various theories as to the origin of duodenal ulcer, and gives detailed histologic descriptions of specimens from several cases of his own. He concludes that self-digestion of the wall of the stomach or duodenum cannot take place so long as circulation and nutrition are normal. The chief cause is to be found in pressure on the blood-vessels by swollen Brunner's glands and accessory pancreatic cells. Thus disturbes nutrition and allows autodigestion to take place. Ulcer is generally secondary to duodenal adenoma.

157. **Plastic Drainage of Ascites.**—Schepelmann describes the case of a 65-year-old man with pronounced ascites from cir-

V. 6
1914

rhosis of the liver. There was also marked arteriosclerosis. A varicose vein the size of a lead pencil, hardened in formaldehyd solution was sewed into the peritoneum and for six and one-half weeks the fluid was conducted into the subcutaneous tissue where it manifested itself by doughy edema of the abdominal wall. Absorption took place from here through the blood and lymph channels. At the end of that time there was partial occlusion of the vein by fibrin. Therefore he recommends the use of larger vessels, a varicose vein as large as the thumb, for instance, or the aorta of a calf. Experimental work can be done on the human subject as there is no irritation and consequently no proliferation of connective tissue as there would be from the use of tubes of metal, rubber or glass.

Wiener klinische Wochenschrift, Vienna

November 20, XXVI, No. 47, pp. 1925-1972

160 Idiopathic Atrophy of the Skin of Congenital Origin. (Dermatitis atrophicans.) M. Oppenheim.
161 Experimental Electrocardiography of the Heart under Influence of Hypophysis Extracts. A. F. Hecht and V. Nadel.
162 Hernia of the Sigmoid Flexure without Hernial Sac. (Zur Therapie grosser Gleitbrüche der Flexur sigmoidea.) H. Finsterer.
163 Radium in Treatment of Cicatricial Stenosis of the Esophagus. F. Neumann.
164 *Ultimate Effect of Tonsillectomy. S. Tenzer.
165 *Permanent Therapeutic Pneumothorax. E. Rochelt.

164. **Effect of Tonsillectomy.**—Tenzer has been reexamining lately a number of children whose tonsils were removed over two years before, and states that there is nothing to indicate any deleterious influence from the tonsillectomy. On the contrary, the children bloomed into good health after the operation and the effect in abolishing the recurring attacks of acute tonsillitis was ideal.

165. **Permanent Therapeutic Pneumothorax.**—Rochelt introduces a trocar with a valve and hermetically closing cap which he introduces as for an ordinary artificial pneumothorax, but leaves the trocar permanently in place. This permits the refilling of the space with the gas as often as desired, without inconvenience to the patient. For this reason ordinary air can be injected and a gas, like nitrogen, is not needed. A special advantage of this retention trocar is that the air is more rapidly absorbed and consequently the compression of the lung fluctuates at times just enough to maintain the elasticity of the lung tissue. Another advantage is that the insufflations as needed do not require any special skill beyond insuring asepsis in the procedure.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXXV, No. 1, pp. 1-230. M. Hofmeier Festschrift

166 Ultimate Outcome of 524 Gynecologic Operations. (Die Dauererfolge 12 jähriger operativer Tätigkeit.) G. Burckhard.
167 Batteries for Two Pocket Electric Lamps Joined as Battery for Cystoscope. (Einfache Stromquelle für Cystoskoplampen.) G. Burckhard.
168 Exploratory Curetting Unreliable in Diagnosis of Cancer of Body of Uterus. G. Burckhard.
169 Cesarean Section, Symphyseotomy and Pubiotomy. (Ueber Kaiserschnitten, Symphyseotomien und Hebosteotomien.) O. Fischer.
170 Cleft Pelvis. (Spaltbecken.) O. von Franqué.
171 *Influence on Later Physical and Mental Development of Obstetric Impression of the Skull. W. Gfroerer.
172 Attempts at Criminal Abortion in Absence of Pregnancy; Three Cases. (Tentamen abortus provocande deficiente graviditate uterina, seine klinische und physiologische Bedeutung.) F. Hammer.
173 Congenital Atresia of Pulmonary Artery and Stenosis of the Aorta; Child Died Second Day. A. Häberle.
174 Absorbing Property of Some Ovarian Cancers. (Eine bisher nicht bekannte Funktion maligner Ovariatumoren.) G. Klein.
175 Multiple Malformations in Genital Organs. (Fall von Pseudoatresie der Scheide und Uterus bei persistierende Kloake und Uterus duplex cum vagina duplici septa.) C. Oertel.
176 Malignant Chorio-Epithelioma with Long Period of Latency. O. Polano.
177 The Lymphatics of Myomas. O. Polano.
178 *Modern Treatment of Osteomalacia. F. Schnell.
179 Operative Treatment of Incontinence of Urine and Extensive Genital Prolapse. P. Steffeck.

171. **Influence of Obstetric Impression of the Skull.**—Gfroerer states that at the Würzburg maternity obstetric impression of the skull is treated only as symptoms arise. In all the cases that came to necropsy other injuries were found more than sufficient to explain the fatality without incriminating the depression in the skull. Even such simple procedures as manipulating the skull to make it spring back into place or drawing it up with a corkscrew are liable to prove serious. In seven cases of obstetric impression in his service the pelvis had been too small to permit normal delivery and the injuries proved fatal. In seventeen other cases the pelvis was contracted but not enough to do serious injury and the children were born in good condition. Five died from intercurrent disease about a year later; the others have developed normally and no deleterious influence has been observed on the growth of the body or mind, not even in the cases of instrumental delivery.

178. **Treatment of Osteomalacia.**—Schnell reviews 334 cases of osteomalacia he has found recorded in the last fifteen years. All methods of treatment have had their successes and their failures, but castration seems to have been most constantly successful. Recurrence is known in only seven cases of the 105 in which the osteomalacia was combated by castration. No other method of treatment can compete with this record which has now a twenty-five-year history.

Zentralblatt für Chirurgie, Leipsic

December 6, XL, No. 49, pp. 1881-1912

180 Case of Retrograde Incarceration. H. v. Thun.
181 Pyramidon Keeps Off Pain in the Wound after Local Anesthesia. W. Wolf.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXIV, Nos. 139-142, pp. 1463-1494

182 Enhanced Toxicity of Cholera Toxins in Animals under the Influence of Heat Plus Humidity. V. Puntoni.
183 The Urochromogen Urine Reaction Instructive for Prognosis in Tuberculosis, but Unreliable for Diagnosis. B. Nicola.
184 *Tongue Sign in Neuropathies. (Nuova sintomo obbiettivo specifico nei nevropatici.) F. Pancrazio.

184. **Sign of Neurasthenia.**—Pancrazio states that for years Ancona and he have noticed that when they ask a patient to show them his tongue if he puts out his tongue in such a way that the back of the tongue and the throat are visible, further examination will almost inevitably reveal other signs of neurasthenia or a neurotic predisposition. Pancrazio calls it an actually specific objective neuropathologic sign, and explains it by the habit of the nervously disposed to examine their own tongues. They look at their tongue so often, and at their throat that the tongue becomes trained in submitting to examination and exposes itself readily and completely, while persons who do not take this morbid interest in examining their physical condition are unable to show the back of the tongue and the throat, as a rule, when told to put out the tongue.

Policlinico, Rome

November 30, XX, No. 48, pp. 1729-1768

185 The Urochromogen Urine Reaction in the Tuberculous. (Sul significato semejologico della reazione del permanganato nell'urina: Reaz. di Weiss.) E. Salustri.
186 The Antituberculosis Campaign at Genoa. M. Ragazzi.
187 *Epinephrin in Treatment of Scarlatinal Kidney Disease. (L'uso dell'adrenalina nella cura della glomerulo-nefrite scarlattinosa.) D. Paoloantonio.

187. **Epinephrin in the Kidney Complications of Scarlet Fever.**—Paoloantonio states that he injected epinephrin to arrest hematuria in a child of 5, at the fifteenth day of scarlet fever, with signs of nephritis and edema. The urine contained ten per thousand albumin and numerous tube-casts while the amount of urine was constantly declining. Suddenly the fever ran higher and blood appeared in the urine, the output of urine growing still scantier. He then injected the epinephrin to arrest the bleeding and also perhaps stimulate the heart action which seemed weak. The third day he gave the epinephrin by the mouth as he saw that not only the blood had disappeared, but also the albumin had dropped to one-half the previous proportion; the edema was absorbed, the diuresis increased and the general condition notably improved. By the tenth day the urine seemed to be entirely normal. Encouraged by this success he applied the epinephrin also in thirty other cases of kidney trouble in scarlet fever, and found it equally effectual in all. By the second day the

condition showed marked improvement and the danger of uremia seemed to be averted. He gave from ten to twenty drops a day, by the mouth, of the usual one per thousand solution except where the urgency of the case called for subcutaneous injection at first.

Riforma Medica, Naples

November 15, XXIX, No. 46, pp. 1261-1288

188 Multiple Factors Cooperate in Production of Gastric Ulcer. V. Palmulli.

November 22, No. 47, pp. 1289-1316

189 Behavior of Agglutinins and Opsonins in Castrated Animals and Animals Injected with Testicle Products. Q. Torelli.

190 Transmission of State of Anaphylaxis from Mother Guinea-Pig to Young. V. Scaffidi.

191 Cysts in the Spermatic Cord. (Contributo allo studio delle cisti del funicolo spermatico di origine connetivale.) B. Formiggini. Commenced in No. 46.

Rivista Ospedaliera, Rome

November 15, III, No. 21, pp. 917-964

192 *Beneficial Immediate Results of Therapeutic Pneumothorax. A. Angelini.

193 *Human Serum Therapy in Pulmonary Tuberculosis. (Di alcuni saggi di sieroterapia antitubercolare interumana in rapporto anche ad arresto di emottisi.) A. Miliani.

194 Roentgen Therapy in Lupus. D. G. Scaduto.

192. **Therapeutic Pneumothorax.**—Angelini states that in twelve of the nineteen patients treated by intrathoracic injection of a gas, anatomic conditions facilitated the pneumothorax and at one stroke the symptoms subsided. This immediate and certain suppression of the symptoms is naturally the more striking when the symptoms had been severe before. Unless the anatomic conditions favor the pneumothorax it is useless to expect much from it, and consequently its sphere is limited. On account of adhesions preventing the expansion of the pleura the method failed in two cases of hemoptysis.

193. **Serotherapy for Hemoptysis.**—Miliani applied serotherapy in thirty-five cases of various forms of tuberculosis, obtaining the serum from other patients convalescing from tuberculous serositis or using the effusion itself. The doses ranged from 2 to 150 c.c., but, as a rule, he injected between 10 and 50 c.c. every day or at intervals of one or two days. The injections were subcutaneous (220) or injected directly into the peritoneum or pleura (54), and the number ranged from three to thirty-three, averaging about five or ten except in the hemoptysis cases. The effects were constantly good in the cases of tuberculous pleurisy or peritonitis, the symptoms subsiding to a clinical cure. No recurrence is known to date—over six months—in any instance. In the cases with mixed infection little benefit was realized. The tendency to pulmonary hemoptysis was arrested in every case and by a single injection, and the hemorrhage was also permanently arrested in a case of hemorrhagic nephritis. This patient was a man of 28 free from tuberculosis, malaria and syphilis. The blood disappeared from his urine after the second injection of 50 c.c. from a healthy young man; 20 c.c. of the same serum apparently arrested rebellious hematemesis in a case of gastric cancer. In sixty-four of the 278 injections made the fluid was pleural effusion or ascitic fluid. These fluids cause various disturbances, chills, headache and abdominal pain if injected unmodified, but not if defibrinated and exposed to the sun for forty-eight hours. With this nothing was observed suggesting serum sickness.

Brazil Medico, Rio de Janeiro

October 22, XXVII, No. 49, pp. 426-437

195 Necessity for Testing Eyesight of Chauffeurs and Motormen. N. da Rocha.

196 Technic for Detection of Parasites' Ova in the Stools. (Meio rapido para revelar ovulos de parasitas intestinaes nas fezes.) A. R. V. Lima.

November 1, No. 41, pp. 438-449

197 The Campaign against Tuberculosis. A. A. de A. Sodré.

November 8, No. 42, pp. 450-461

198 Epidemic Diseases in the Amazon District. (Notas sobre a epidemiologia do Amazonas.) C. Chagas.

Hospitalstidende, Copenhagen

November 26, LVI, No. 48, pp. 1445-1446

199 *Headache of "Rheumatic" Origin. (Om reumatisk Hovedpine.) P. Lorenzen.

200 Intermittent Ileus from Kinking of Splenic Flexure. I. Collin.

December 3, No. 49, pp. 1447-1478

201 Complement Deviation in Spinal Fluid. (Undersøgelser over Weil-Kafka's Hæmolysinreaktion i Spinalvæsken.) H. Boas and G. Neve.

202 From the Balkan Seat of War. (Fra serbiske Krigslazaretter.) J. Stürup.

199. **Rheumatic Headache.**—Lorenzen says that after excluding other causes for the headache we can sometimes explain it by discovery of tender lumps under the skin of the head and neck. There is evidently some inflammation of the fibrous tissue, causing the headache, and this fibrositis usually yields to skilful massage. The fibrositis generally involves more or less of the adjoining muscles in the neck and its first development may date from childhood. The chronic tendency of all rheumatic affections is evident here, and the intervals between exacerbations are short as a rule so that patients with headache from this cause are seldom long free from it at a time. The attacks are brought on by slight indiscretions in diet or exacerbations of a chronic throat or nose affection, or by long straining to write or watch a performance. The patient may wake with headache and a little stiffness in the muscles involved, and he remarks that he must have slept with his neck in some unnatural position. The constant slight irritation may entail nervous irritability. Chilling of the head may bring on an exacerbation; in women this may occur after washing the hair. When the rheumatic origin is suspected, the entire head, front and back and the neck should be palpated. During the periods of calm, palpation may not cause pain. When the nerves can be palpated on a firm background they may occasionally feel irregular and thickened, but this is rare. The scalp seems thickened in parts, and the skin at the base of the skull may lie in ridges. The pains are vague and hard to locate; the sensation is a vague feeling of oppression, pulling or tenderness of the tissues, and there may even be a tendency to dizziness. There is generally total relief from pain after the massage.

Ugeskrift for Læger, Copenhagen

November 27, LXXV, No. 48, pp. 1875-1912

203 *Treatment of Internal Tuberculosis with Stored Light Rays. (Fortsat Beretning om Behandling af intern Tuberkulose med absorberet Lysenergi.) T. Brinch.

December 4, No. 49, pp. 1913-1970

204 *Chronic Suppuration in Infant's Ear. (Om det kroniske suppurative Øreflod i den spædе Barnealder og dets Profylaxe.) F. Pontoppidan.

203. **Utilization of Absorbed Light Rays in Therapeutics.**—A previous communication on this subject by Brinch was summarized in THE JOURNAL, Oct. 26, 1912, p. 1586. He here reports additional cases and reviews his experience with a total of seventy cases of pulmonary tuberculosis and a number of other localizations of tuberculosis. He regards the results as very encouraging. The effect of the treatment was much greater with surgical tuberculosis than with pulmonary lesions. This experience confirms Rollier's with direct sunlight, tuberculous lesions in lymph-nodes and bones being far more amenable to treatment by radiation.

204. **Chronic Suppuration in the Ear in Young Infants.**—Pontoppidan insists that this condition is more common than generally realized, and that it is frequently the unsuspected cause of deafness later and even of deafmutism. The discharge from the ear is liable to prove extremely rebellious to all measures and he explains this as owing to the peculiar anatomic conditions at this age in this region. The antrum is predominantly involved, and he declares that any suppuration in the antrum of an infant which persists for from four to six weeks, even if there are no symptoms except a profuse purulent discharge from the ear, should be treated without delay by cutting into the mastoid antrum. The anatomic conditions render the operation far simpler and easier than in adults, and even the youngest infants bear the little operation without harm. He has performed it in seven cases, as he relates in detail, the children under one or two years of age. In his 309 mastoid operations, 131 were on children under 15, including the seven infants.

Upsala Läkareförenings Förhandlingar

XIX, No. 1, pp. 1-97. Last indexed December 6, p. 2114

205 The Psychologic Examination. (Den individualpsykologiska frågeställningen inom psykiatrien.) H. Sjöbring.

206 Innervation of the Sternalis Muscle. A. Strandberg.

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